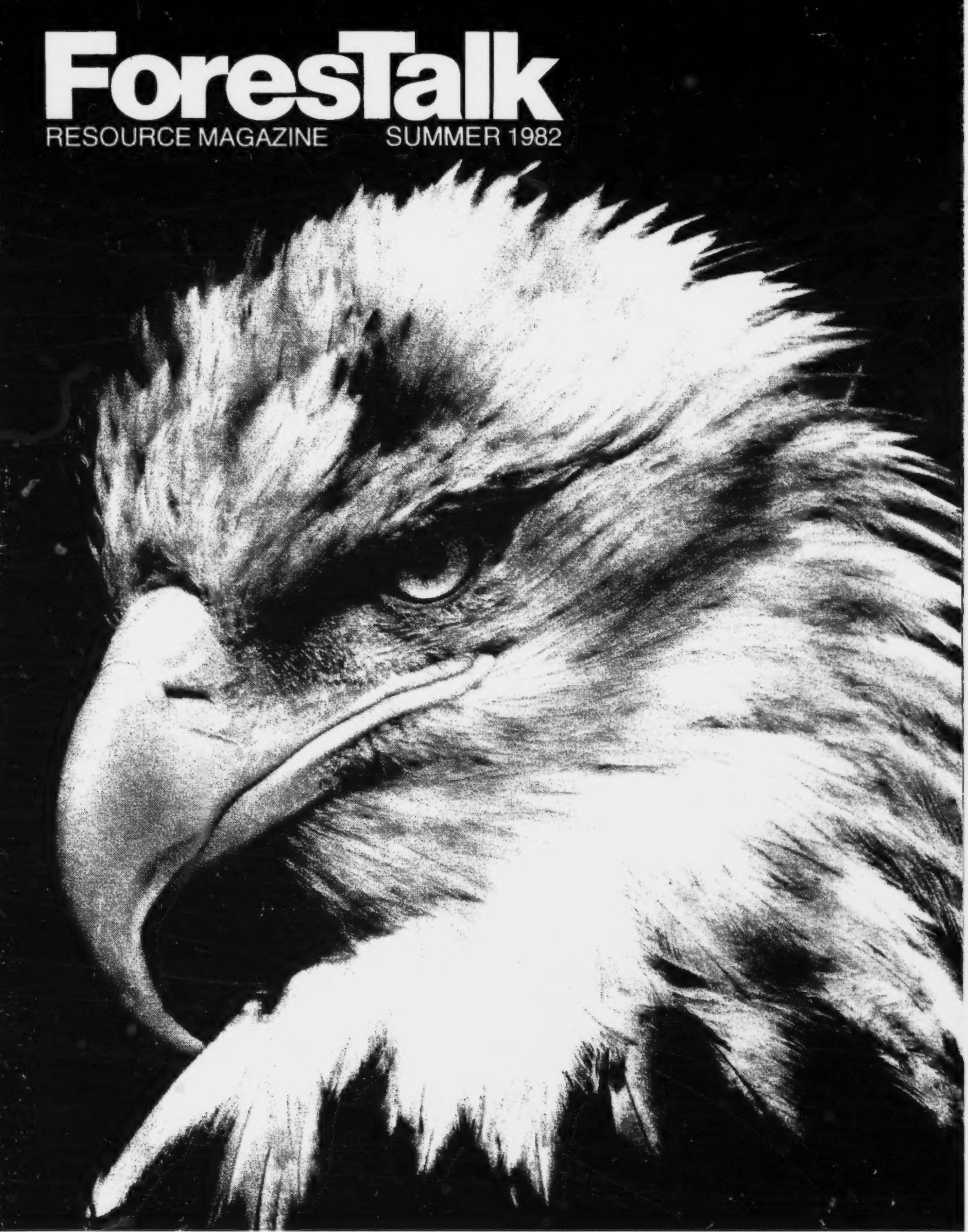
ForesTalk

RESOURCE MAGAZINE SUMMER 1982



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ForesTalk

Volume 6 Number 2 Summer 1982

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Cover: Some of B.C.'s more magnificent birds establish their nests in the tops of the province's tallest trees. B.C.'s high-tree nesters include osprey, various types of hawks, and bald eagles. This issue's cover photograph of a bald eagle was taken southwest of Cape Scott on Vancouver Island by Photo/Graphic photographer Gunter Marx.

FEATURES

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During these tough economic times the Ministry of Forests is working to maintain a healthy forest industry and to protect the economic security of the people and the communities that depend on that industry. The ministry's new five-year program (1982-83 to 1986-87) continues initiatives taken in our two previous five-year programs, initiatives that will pick up momentum by 1984-85. Our number-one concern is to maintain basic silviculture, and provincial nurseries are expected to produce 97 million plantable seedlings in the current year. By 1987-88 seedling production should reach 150 million.

Tom Waterland

Hon. Tom Waterland, *Minister of Forests*

ForesTalk Resource Magazine is published quarterly by the Province of British Columbia, Ministry of Forests, Information Services Branch, 1450 Government Street, Victoria, B.C. V8W 3E7. Telephone: (604) 387-5985.

Designed to encourage interest, discussion and understanding of British Columbia's forest, range and recreational resources, ForesTalk is available free on request. Second class mailing registration No. 3863. International Standard Serial Number ISSN 0700-1770. ForesTalk welcomes submissions from professional writers and photographers on themes related to the B.C. forests and their uses. Address enquiries to the editor.

Province of British Columbia Ministry of Forests

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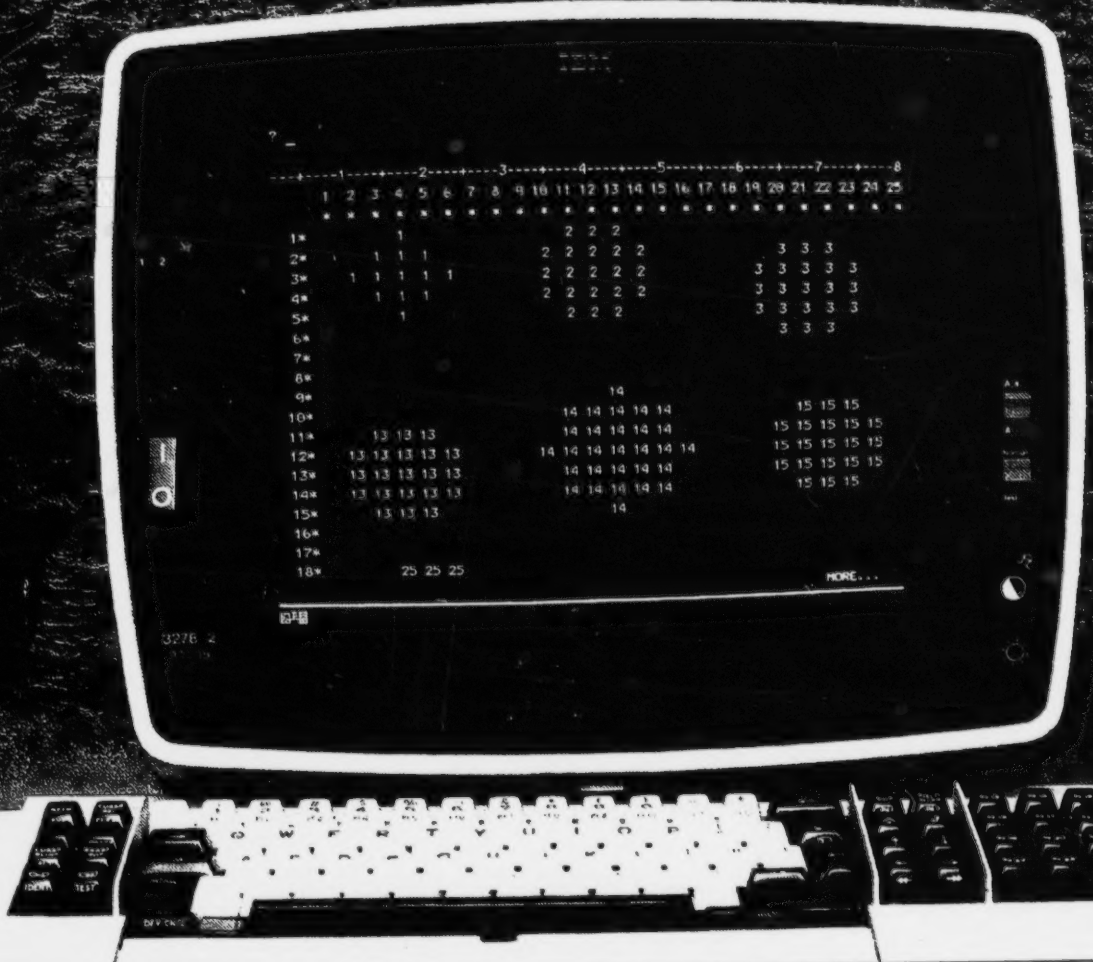
THE COMPUTERIZED FOREST

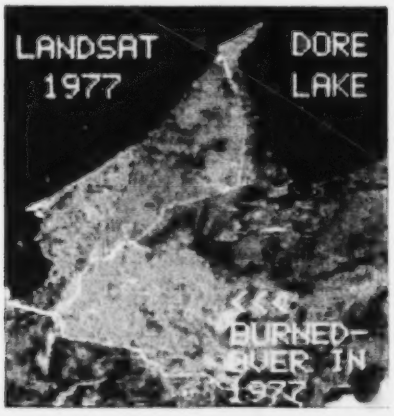
by Grant Ellis

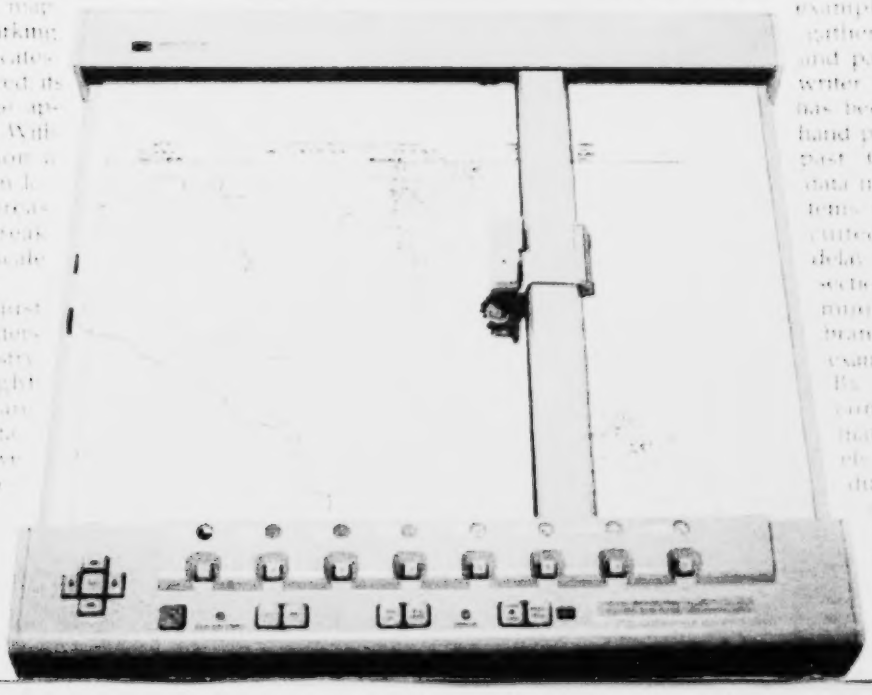
The steam engine industrialized 18th century England and ultimately rearranged the way western society dealt with the world. Today computers are having much the same impact on contemporary life, and forestry is no exception.

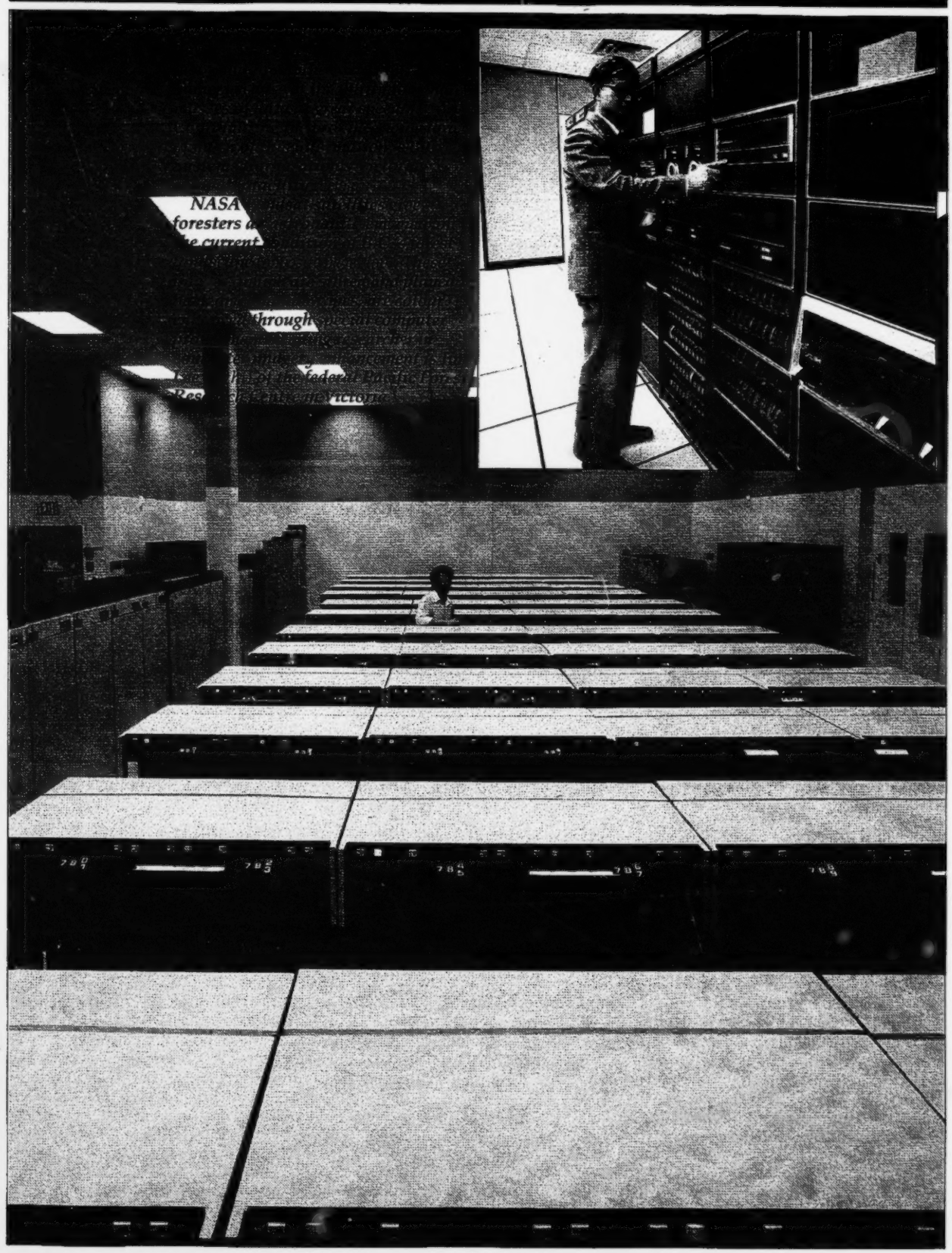


photography by John Thomson

A valuable tool in the perennial struggle against forest fires is the Ministry of Forests' computer-based lightning detection system. Recently introduced into the province, it can now chart lightning strikes (below) as far north as 300 kilometres beyond Smithers and Dawson Creek.






NASA

Forestry data images stream into the control room from the satellite receiving station at Prince Albert, Saskatchewan, and the Alberta Forest Service is known for its ability to analyze masses of data at great speed. Coordinating the processing and flow of much of this information is B.C. Systems Corporation's Victoria computer facility (below).

NASA Landsat satellites give foresters an astronaut's eye view of the current condition of B.C.'s forest landscape (opposite page, top). These images, which are stored and played back on computer tapes, are colour enhanced through special computer programs. A leading researcher in computer imagery enhancement is Jim Lee (right) of the federal Pacific Forest Research Centre in Victoria.

can simulate the growth pattern of Douglas-fir and lodgepole pine forests. Instead of waiting the half-century or so required for an actual forest to take shape, the computer can grow a forest in seconds, throwing in any certain forest management treatments that might affect that growth. What would happen if we thinned the stand at age 30? At age 35? Would fertilization pay? What age is best? This ability to project the development of a stand of trees is an important aid to forest management and economic analysis.

Of course computers don't do the work on their own. The power behind the machine is the trained human mind and Mitchell has been to the one to develop the necessary software. Like the game of Ken Mitchell is forced to stand modelling for the ministry's research branch.

Mitchell began work on the growth and yield computer program after studying stand growth in white spruce in Prince George. He worked with the Canadian Forestry Service in Edmonton to refine the program and then went back to Victoria [illegible] he continued to refine and test the growth and yield projection program. It became operational in [illegible] and [illegible] in 1984.

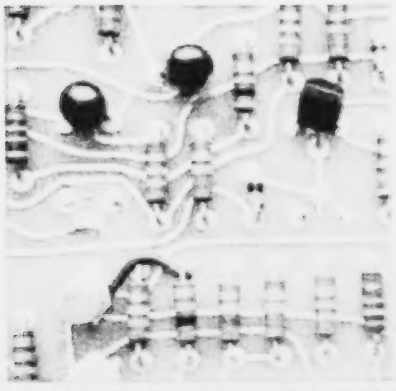
Mitchell's work is an example of the kind of research project that would be utterly impractical without data processing. Computers help foresters analyze data, create models, test hypotheses and speculate on the future. For Darrell Kaiser of the ministry's planning branch, for example, a computer is indispensable. It is the job of his branch to come up with the timber supply profile for the whole province and computer power is the fingertips the mountains of data the ministry has gathered over the years.

We gave Mitchell's findings as well as reams of other data to come up with timber harvesting levels for the province's timber supply areas. Since [illegible] we test out how different silvicultural treatments might affect harvest levels in a given forest region and this helps us determine how best to use forest treatment funds. Our findings are used to help the Chief Forester when decisions are made on the annual allowable cut.

At the ministry's silviculture branch, computers track the province's new tree growth. When a piece of forest is cut, burned or planted, that information is entered into a provincial history record system. Because this information is available both at headquarters and in the field over [illegible] systems Corporation's province-wide data sharing network, silvicultural planners can check in minutes the progress of a new plantation or thinning treatment anywhere in the province.

Computers also help forest managers make use of the images from NASA's Landsat satellite. Every day the satellite scans the country in north-south strips — says Jim Lee of the federal Pacific Forest Research Centre (PFRC) in Victoria. Each of its four scanners records reflected radiation in a different colour band. The satellite sends the information in the form of digital data to earth stations in Prince Albert and Newfoundland. The Canada Centre for Remote Sensing (CCRS) provides us that information in the form of computer tapes.

The tapes played back through a computer produce photo-like images on a video screen but they need colour enhancement to make them ideal for use in forestry. We changed the



The shape of tomorrow's forests will be greatly influenced by the information related to foresters through their computer circuit boards.

Forest ministry researchers Ken Mitchell [illegible] and Ian Cameron, using data derived from taking apart hundreds of trees, including their roots, link the science of biometrics with a special FASS computer program to simulate the future growth of whole forests.

data base — says Jim Lee — to produce the colour effect that is most pleasing to the eye in terms of making things clear. We want to see where the pest infestations are, the clearcuts, fires and healthy forests. The satellite's greatest value is in [illegible] the forest landscape from one year to the next. Computer imagery enhancement makes these changes leap out.

To maintain a more detailed record of forestland use, both the Ministry of Forests and MacMillan Bloedel Limited have installed the Interactive Graphic Design System (IGDS), a computer-based mapping system. The ministry's IGDS system can display the whole province or just a hectare of it on its display screen. It can call up a wide variety of information about any tract of forestland or range land, administrative boundaries, ground cover, tree species and age, topographic, ecological data, and so on. The ministry data is still being entered into the system — thousands of maps and polygonal site maps, along with the immense body of data

The Breakthrough: *Binary Digits Meet Silicon Chips*

Two deceptively simple concepts make data processing possible. One is that virtually any fact or process can be represented, in symbolic logic, by combinations of ones and zeros — the binary code. The second is that electrical current lends itself very nicely to the representation of ones or zeros: A switch can be off or on; a magnetic field can be negative or positive.

The use of electronics to store and manipulate data was applied early on in the enormous postwar digital computers like ENIAC, which used hundreds of vacuum tubes, a great deal of space, and prodigious wattage. They were impractical for widespread use, and worked with decimal digits. But in 1948 the transistor was announced. It was smaller, cheaper, and cooler than a vacuum tube. Soon the electronics industry, spurred on by the space race, was compressing whole circuits — and eventually, whole computers — onto tiny chips of silicon as a result of the transistor breakthrough. And computer technology seems still to be changing at the speed of light.

that makes the maps live. When that chore is complete, the IGDS computer will be able to answer most forest inventory questions any forester might want to ask.

At MacMillan Bloedel's Woodlands Services Division in Nanaimo, a request is received from Sproat Lake Woodlands Division near Port Alberni. A new section of the Tree Farm Licence is to be logged; information is needed.

An MB technician keys in the location of the cutblock and instructs the IGDS system to respond with data. The system spins it out over the telephone line to Port Alberni: contour maps, plots of stands, data on species, ecological data, and geographical features. The maps appear on the plotter at Port Alberni. Sproat Lake Division engineers can begin to plan logging roads, equipment settings, bridges. MB foresters start on reforestation plans.

Data about the same section is already in the hands of MB marketers and planners at head office, where it can be used to plot the company's financial and marketing courses for the months and years ahead.

"We're designing a communications network," says MB's information systems vice-president Bud Stapleton. "Information about our trees and logs will be available by microwave and telephone lines at head office, regional offices, and division offices on a need-to-know basis. We all use it for different purposes, of course, but we will all have current information."

Stapleton's words are significant, because computers and data communications systems are only as good as the data fed into them. The finest hardware and programming cannot compensate for old or inaccurate data.

All logs harvested in B.C. must be scaled to determine such things as size, species, grade and ownership. Scalers typically write down this information out of doors and often in the rain, but all-weather computers that can store up and play back this information will soon be available.

(above) ***Ministry of Forests scaler Lloyd Anderson tries out a prototype of a computerized log-scale terminal currently being tested by the ministry.***

The problem of gathering data in the field for computer use is one that has plagued people for years. Some of the best solutions have been the private inspirations of people like Mel Lehman, a long-time employee of Crown Zellerbach's coast wood supply division. Lehman knew that log scalers have a difficult time judging the size and quality of logs, writing the information down (always outdoors, and usually in the rain) then sending it, dog-eared and handwritten, to head office. In 1975 a light flicked on under Lehman's hard hat and he took his idea to the company's computer department.

"We all went to work on it," says Crown Zellerbach's Tom Boulanger. "Mel's idea was that we could use a standard, hand-held, calculator-sized data recorder similar to ones used in supermarkets. We worked out a computer program and Mel developed the practical side of using the recorder in the field. It hangs on a man's belt with a separate battery pack that holds about a day's charge. The scaler enters the data through the keyboard. At the end of the day he goes back to the office, places the whole thing into a receptacle, dials the head-office data base, and sits back. The device recharges the battery pack, and an acoustic coupler sends the information by telephone. All CZ departments have the data the same day."

The Ministry of Forests (through BCSC) and MacMillan Bloedel are both at work on a more sophisticated version that will itself be programmable. The Ministry will use it for scaling and to speed billing; MB will use it to shorten data-delivery times.

"We want a system that tracks logs from the woods to the mill," says MB's Bud Stapleton. "It has often taken longer for the data to get to head office than for the logs to get to the mill. We're also looking into optical readers — the kind supermarkets use. We'd tag the bundles and read them with a light pencil."

Innovation is also the speciality of the support industry that has sprung up to provide software and hardware packages to industry. Northwest Digital Ltd. of Richmond has recently introduced a desktop computer system designed to handle the data base for a typical logging division of a large forest products company. "You could," says company president John Letts, "ask the system to report all stands of a certain species and grade within a particular Tree Farm Licence that can be harvested in a given season with a particular logging system."

Looking ahead, the utility of computers for forestry has hardly been touched. "They can invent almost anything," says Bud Stapleton. "The real challenge lies in the application, getting them to work reliably."

LETTERS

Who Should Plant The Trees?

I enjoyed reading Douglas Cowell's accurate description of treeplanting in the Spring 1982 issue of ForesTalk. I find treeplanting to be very rewarding since I am replacing resources rather than exploiting them. But as I embark on my fourth season, I am apprehensive of the ever-increasing intervention from our fellow forest workers in the IWA.

Treeplanting is a hard job that takes a lot of motivation, patience, and improvization; three qualities which would be suppressed by the structured working environment proposed by the IWA. As a treeplanter I desire as much freedom as possible to decide where I'll work, how I'll work, and who I'll work for. I would unhappily discontinue treeplanting should it ever be subject to the environment of a logging camp with an hourly wage system.

Clay Perry, the legislative director for the IWA is quoted: "It's just not rational for the province to rely on the counter-culture people for such crucial work." I suggest that Mr. Perry is perhaps unaware that we "hippies" do a far better job of planting than the union crews, and for approximately half the cost.

I enjoy my work, and the camping lifestyle that goes with it. I wish the best for all those involved in this year's planting effort, and hope we can reach a peaceful agreement with our brothers in the IWA.

Bruce McMorran
Simoom Sound, B.C.

Oh, Fiddlehead!

On page 15 of the Summer 1982 issue of *ForesTalk* you have a beautiful photo of a fern by Tim Fitzharris which is described as being a fiddlehead fern. Upon close examination of the picture I must say that I don't think it is. As an avid spring gourmet of these delectable morsels, I have always chosen them by their groove up the inside of the stem, and also by their very green colour and full head, plus the noticeable brown tissue paper which covers the outside. The fern in the picture, although beautiful, doesn't resemble this edible variety at all.

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Tim Fitzharris reports that various ferns across Canada are commonly called "fiddlehead." His use of the term "fiddlehead" was not meant to indicate the name of the fern photographed, but to describe a particular stage in the fern's development.

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In the Fall 1982 ForesTalk article entitled "People of the Cedar," the little boy on page 11 is laughing because the "wolf" mask he is said to be wearing is in fact a bird monster mask. In the same article neither Norman Tait (an artist of world stature) nor his apprentice were identified in your photograph captioned, "painting new canoe at U.B.C. Museum of Anthropology." And who is the artist photographed carving a pole at K'san?

It is important that the Indian artist is acknowledged as well as his work. The world's museums are full of great coastal Indian art without the name of the artist; not because the names were difficult but because nobody cared. We cannot perpetuate this sorry state of affairs into this century.

Joy Inglis
Quathiaski Cove, B.C.

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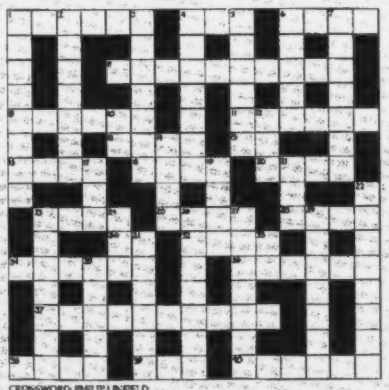

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Answers page 21

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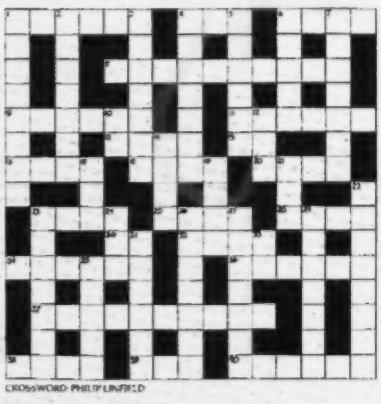

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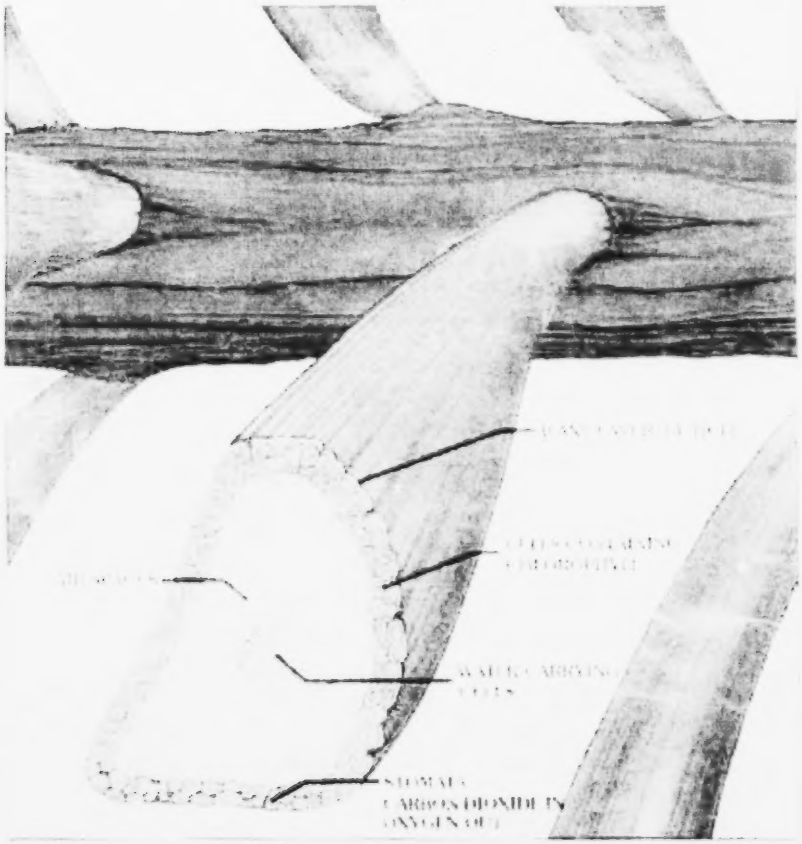
Answers page 21

Measuring The Forests To Come

Given that trees are British Columbia's prime resource, few things could satisfy forest managers more than the ability to accurately forecast the growth rate of new forests. The biometrics section of the Ministry of Forests research branch, using computer analysis of tree growth, is hard at work on exactly that kind of program.

Biometry is the science of measuring living things. The analysis of thousands of measurements permits predictions of how other biological specimens will perform under certain circumstances. And to measure forest growth, you must first know how a tree grows.



How A Tree Grows

Trees grow in all directions at once. The growth which is the tree's growth generator is powered by the sun's energy. Every year it adds a new leader and a whorl of branches at the top of the stem. Lower branches increase in length, creating a shell of new foliage.

Below ground the root tips, protected against abrasion by a tough outer layer, reach outward and downward, growing thicker and longer in proportion to above ground growth. Tiny root hairs absorb moisture and nutrients.

Tree growth actually originates in the cambium, which is a layer of living cells separating the wood and bark. The inner side of the cambium produces new layers of sapwood or xylem; the outer side of the cambium produces inner bark, or phloem. The sapwood conducts water and nutrients from the roots to the tree leaves or needles. Here the process of photosynthesis produces the tree's life-sustaining sugars. These sugars are returned through the inner bark to the tree's growth areas in the stem, branches and roots.

The inner bark dies and becomes outer bark — protection against pests, heat, cold and injury. Old sapwood becomes dead heartwood.

The sapwood cells that are added each spring are big and pale; late summer cells are smaller and darker. The colour difference reveals the growth ring for that year.

Forecasting Future Growth And Yield

Working cooperatively with the Alberta Forest Service and neighbouring U.S. states, the forest ministry's biometrics section sends data-collection teams to the forests to study specific stands of trees. Camping out in a stand, they select representative trees, measure them, fell them and measure them again.

We take apart hundreds of trees to see how they grow," says Ken Mitchell, the section's technical advisor on computer stand modelling. The team bucks up the stem and splits it at the bole to expose past annual growth, extracting thousands of individual measurements overall. It uses cavities and scars to reveal damage and competition between trees.

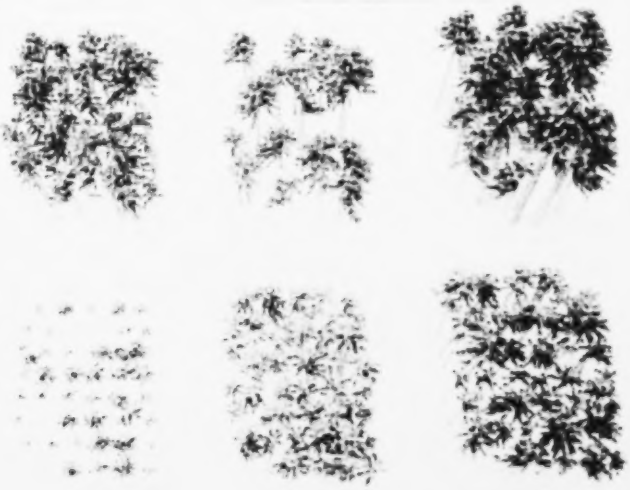
Armed with all this information, Mitchell and colleagues have created a mathematical model of the trees' growth patterns. They marry this model with a highly specialized computer program called the Tree And Stand Simulator (TASS), which Ken Mitchell and various associates have spent nearly 20 years developing. TASS breathes life into the mathematical model and simulates the future growth of the stand. The computer actually projects the future growth of the trees branch by branch. The team then uses it to estimate the volume of wood and the nature of the products the forest eventually will yield.

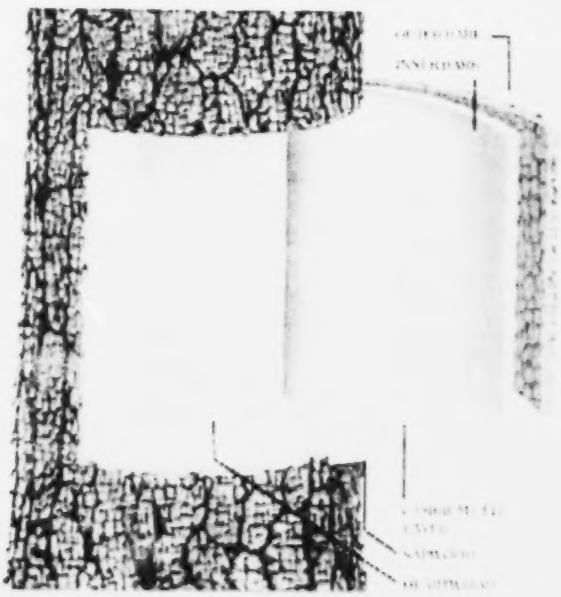
But so far, other than natural tree growth, what affects a forest's future yield the most significantly is the intensive forest management that TASS provides growth and yield estimates for different silvicultural treatments. What would the stand's future yield be, for example, if it were thinned when the trees were certain sizes? What if it were thinned *and* fertilized? Instead of waiting 50 years or so to find out, the forester can ask the computer to project specific responses to these treatments. The computer simulates that growth in seconds.

So far, TASS has simulated the growth of selected stands of lodgepole pine and interior Douglas fir. This information is now used to develop a set of generalized tables that will give foresters managers the ability to predict future growth of lodgepole pine and Douglas fir in their own regions. The long-range intention is to expand TASS to look at B.C.'s other major tree species.

As Ken's biometrics research is refining such specialized techniques as simulation, others great potential to the ministry at a time when there is concern about the continued supply of trees. It will, at least, help the Ministry of Forests and the forest industry make sound land management decisions. But as Ken Mitchell points out, sophisticated tools such as computer models will never replace the judgement and experience of seasoned foresters.

Like gardens and farmers' fields, tended forests grow better than those left to grow on their own. But what kinds of silvicultural treatments yield the best results? To find out, foresters no longer have to wait the 50 years or so it takes for a forest to fill out: today a specially programmed computer can simulate that growth in seconds. This simulated forest growth can then be turned into a scale model.





Eli Sopow

by **Gordon Price**

"I like the woods. I like the way they smell and feel. When I write about trees, I have a physical, sensual image as I write. It feels good."

Eli Sopow's good feelings about trees appeared in print four or five times a week in Vancouver's morning daily newspaper, The Province, *from 1979 to 1981. For the first time in B.C.'s media history, a general interest publication featured forestry as a specialized subject.*

During Sopow's years at The Province, *businessmen in downtown office towers began their days with coffee and his column. But loggers and working people from Sooke to Smithers read him too; he aimed for the average reader, omitting jargon and explaining technicalities.*

Like so many others involved in forestry, Sopow, now 34, enjoyed hiking and camping in the bush as a young man. The impact of the industry in his hometown of Castlegar was ever-present and he began his working life at the local mill, but a talent for writing and an interest in political science and economics led him first to Notre Dame University, and then on a journalist's apprenticeship.

"I went to the Trail Daily Times, *" he recalls, "for the massive sum of $450 a month. I unionized the place and quit shortly afterwards. I went to Rossland and was editor of the paper there until my advertising manager, in a fit of rage, burned the place down. After work as a stock boy and lab technician, I was taken on by the* Cariboo Observer, *and then went to the* Prince George Citizen, *to CBC television in Calgary, to* The Province *and finally to the Legislature as their reporter in Victoria."*

And now that Sopow has taken a step back from the day-to-day events of forestry reporting, ForesTalk *thought it a good time to talk with him about the way the media reports on forestry in British Columbia.*

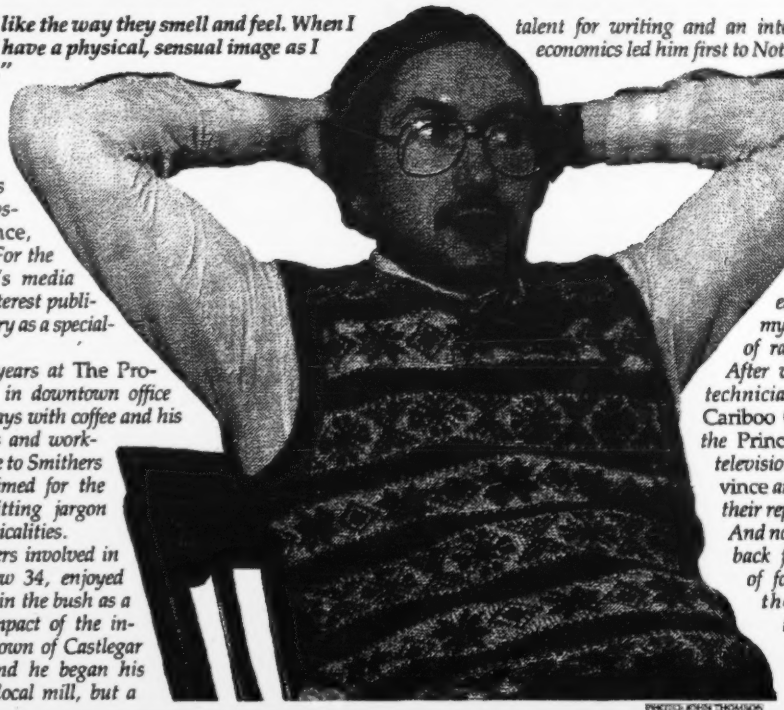


PHOTO: JOHN THOMSON

FORESTALK: Did you need to do any background work when you started reporting on forestry for *The Province?*

SOPOW: To start off, I worked night and day. I read every royal commission report, including the 1910 Fulton report. I read Pearse's report on stumpage. I got every bit of information I could from foresters. I made friends with them; they sent me copies of technical reports — and I read every one of them. I went to every conference I could; or I got all the papers.

As I learned more about forestry, I felt it was the most important journalism beat in B.C. It was fascinating; you made it what you wanted to make it — a political story, an economic story, a biological story. It's all there.

FORESTALK: What impact did your column have?

SOPOW: I've never had such reaction in my life to anything I've ever written. I was getting letters every week, mostly from the industry, saying, "Hey, finally someone sees that we're here. Thank God!"

I had letters from all kinds of people and phone calls from places like Nakusp and Greenwood and Terrace from people I didn't even know, saying, "Hey, I just read your column. Keep up the good work."

If a reporter really wants his ego stroked, all he has to do is specialize in forestry in this province, and do it well and not be afraid to take a stand against industry, environmentalists, unions and anyone else who is not doing what they should be doing.

"The industry has a very poor concept of the role of the media. Too many of them consider it a public relations vehicle. Well, that's not the way it works. They don't see it championing the average man or serving a controversial role."

FORESTALK: Do you really feel the public cares that much about forestry? It's not exactly the main topic of conversation over coffee break.

SOPOW: In Vancouver, people have an association with Stanley Park — that's it. But outside of Vancouver people know about forestry. Practically every community in this province has a sawmill. They know it's their bread and butter. For some communities forestry provides 90 cents out of every dollar. Forestry is big news and people are starved for information, for good forestry reporting.

And there is much more sophistication out there than most reporters give credit for.

I got into a cab one day, and though the driver didn't work in the forestry industry, we got into a discussion. I said, "I don't think they're charging the industry enough money." He said, "You mean stumpage, don't ya?"

FORESTALK: In B.C., the fraternity of forestry reporters seems to consist of about three people.

SOPOW: Most reporters don't consider forestry to be a glamorous beat. People consider you a tree reporter. I told my sister I was writing about forestry — the most important industry in the province — and she said: "Forestry? What can you say about a tree?"

FORESTALK: You mean that's the reason for the lack of coverage? Because it's not glamorous?

SOPOW: Journalism is a very shallow business in many respects. If you're Joe Reporter who wants to make a name for himself, the easiest way to do it is to run around and write about the obvious. Police stories. Politics. It doesn't take

much work and you get on the front page.

Forestry is different. It's tough. You can work your butt off for a week and do a nice hard-hitting analysis — and you might make the front page. But it's not that easy.

If there were more reporters in forestry, it would be a lot easier because then you could chase other reporters around and develop your stories.

FORESTALK: You could have what is called pack journalism?

SOPOW: Yeah, but trying to start pack journalism in forestry is pretty hard to do. Life is too instantaneous and trees aren't. Give me an instant tree and I'll give you front-page news on forestry every day. If you grew and cut trees like wheat, there would be issues today and tomorrow.

FORESTALK: What about radio and TV? Why does it seem that they give so little time to resource reporting?

SOPOW: It could be thin staff, where the reporters have to cover too many things. But the management should fork over a few more dollars and have a resource reporter. I don't see one in evidence at the CBC. I'm amazed that BCTV, a powerful, well-run organization, doesn't have a full-time resource reporter.

FORESTALK: Can you speculate why this should be?

SOPOW: For decades, industry and government weren't telling us anything. All we heard were the catch phrases like "sustained yield," the lull words like "reforestation." So what was the worry? The trees are going to grow back. Where are the issues that require a full-time reporter?

FORESTALK: But what about the standard adage that in B.C. forestry is worth 50 cents out of every dollar? Don't financial page editors think forestry is worth a big chunk of coverage on that fact alone?

SOPOW: It's good news. Who cares about good news? For most reporters, that's pretty boring stuff.

FORESTALK: But you didn't find that the news was all good.

SOPOW: The news was mostly bad. Which means it's news. But you have to dig; you have to claw tooth and nail to find that kind of stuff.

FORESTALK: So what were the dominant issues during your time at *The Province*?

SOPOW: The turning point was when the Ministry of Forests issued its first forest and range resource analysis and five year plan. That was when the ministry finally started talking about scarcities, about conflicting demands on the forest resource base. They admitted that we had made mistakes and we were in trouble.

FORESTALK: What do you think is the impact of that study?

SOPOW: What freaks me out is the massive influence B.C. has on the rest of the world. We export more lumber than any other country in the world.

The U.S. is going bananas at the moment because B.C. sells so much of its lumber in that country. But the U.S. Forest Service came out with an analysis that had a line in it that went something like this: "We're in a lot of trouble (with impending wood shortages). It's going to mean using materials other than wood, which means more water and air pollution. But hopefully we can get out of trouble by relying on Canada, primarily British Columbia."

Little did they know about B.C.'s timber supply problems. And if we run out of wood, then other countries run out of wood because they rely on us for their timber.

FORESTALK: When the resource analysis first came out, it got maybe a week of heavy coverage in the print media, if that, and then nothing. It got on the front page once or twice, and sometimes not even as the main headline. The electronic media didn't even know how to treat it.

"There's a hunger out to learn more about forestry. People are realizing it's not just a bunch of loggers cutting down trees; there's a much more sophisticated audience out there. They are aware of the issues and want to know more."

SOPOW: For radio, it was kind of hard to fit into a 30-second clip. It's not bad TV but it's all shots of trees and cutting wood. The real issues are difficult to put into pictures. But that's no excuse.

It's a complex technical subject. But that's no excuse either. With complex issues, you have to boil them down to simple terms that everyone can understand — which is what I tried to do. Then you can have political awareness, and then you can have social change.

FORESTALK: What was the attitude of industry, particularly management, to you and to the media in general?

SOPOW: In the beginning, they loved the publicity. Then when the reports were somewhat critical, they got very offended. I fell from grace somehow. The industry has a very poor concept of the role of the media. Too many of them consider it a public relations vehicle. Well, that's not the way it works. They don't see it championing the average man or serving a controversial role.

FORESTALK: What are the underlying issues in forestry, the ones that should be on the front pages today and in all likelihood will be on the front pages tomorrow?

SOPOW: What we will see on the front pages tomorrow — and it is already starting to appear — is a lot of unemployment in the forest industry. Sawmills will shut down because there won't be enough wood in some areas of the province. Technological change will come along and people will be laid off. No longer will you be able to drop out of school, find a girl, buy a Camaro, have kids and work at the sawmill. There's going to be a whole change in society.

FORESTALK: How about the markets for the timber we sell?

SOPOW: Within five years, if everything goes well with interest rates coming down, the situation will be right in the U.S. for the baby boom generation to buy houses.

They'll be screaming for lumber. B.C. will be able to sell every little stick it can get its hands on. Which means the government can make as much money as it has ever made — and become very politically popular.

So what does this do for sustained yield? Do we cut every stick of wood in the forest to take advantage of the situation because times will get worse later on, or do we maintain an even flow of sustained yield?

FORESTALK: What other issues do you think will affect industry and government?

SOPOW: Soon the forest industry is going to be screaming about the change in how much money it is going to have to pay the government for stumpage. We have undervalued a lot of our resources. I know there are some people in government who realize this today and want to make changes. There shouldn't be any free lunches.

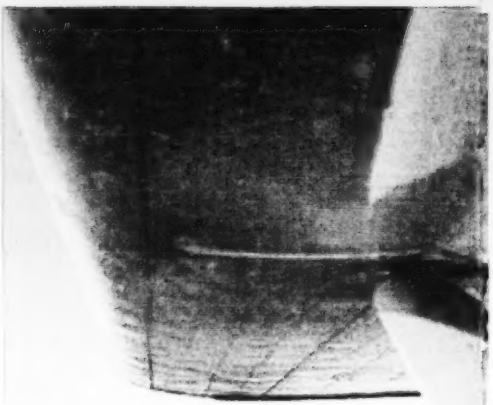
FORESTALK: So you say we will have rapidly expanding but short-term markets, increased government stumpage revenues, dislocation of mills, less employment because of automation, and in the long term, a shortage of wood. But do you feel the public is sufficiently aware of these and other forestry issues?

SOPOW: When I was covering forestry regularly I was impressed by the feedback I was getting. People really wanted to learn about forestry. The ball has started to roll. It's important now that the media keep it going. There's a hunger out to learn more about forestry. People are realizing it's not just a bunch of loggers cutting down trees; there's a much more sophisticated audience out there. They are aware of the issues and want to know more. I'm optimistic. I think there's going to be enough public pressure to make changes.

A TOUGH DECISION ON THE TAHSISH

by Diane Swanson

Powerful Pacific winds whip the ocean water into tall swirls around naked rocks, riddling the clouds with jets of foam. All day long the winds persist, driving strong white waves to meet a lonely land: there's an empty beach, black with clean fine sand; a green bank of salal, tangled and impenetrable; and a far-ranging forest, almost eight centuries old. In the distance, snow-tipped mountains form a hazy backdrop.



Photography by **John Thomson**

The scene is the northwest coast of Vancouver Island. The date is today, last week or last century. Unlike much of British Columbia, this remote part of the island has changed very little. Ancient Nootka canoes, half-ruined by moss or half-carved from logs of red cedar, provide shelter for flocks of salmon-eating bear the edge of great forests. At Ahaswinis Park, a lone totem pole looks hauntingly out to sea, guarding the Indian burial grounds of Esperanza Inlet. At Yuquot sound, site of one of the oldest settlements on the Pacific coast — a tiny village and Indian reserve of less than 100 people who still depend on the sea for their food and livelihood.

But the scene is also one of growing controversy. Valued by residents and recreationalists as a wilderness area, much of the chosen coast from Nootka Sound to the Brooks Peninsula is marked on the Ministry of Forests map as commercial forest land, falling within either the Nootka Timber Supply Area (TSA) or various Tree Farm Licences. Forest companies have held timber licences here for most of this century, but they have logged relatively little up to now. Some watersheds are still virtually untouched.

Ironically, this unexploited coast is where Europeans first discovered B.C. — when Captain James Cook sailed into Nootka Sound in 1778, dropped anchor at Chief Maquinna's friendly Cove and became the first white man to stand on what is now British Columbia. Cook's first thoughts were for the coastal trees — towering 80 metres tall and three metres thick, which he needed to replace the spars on his tall ships.

Locally, this country produces plenty of trees to supply us, Cook said, but that was not to prove to be an omen for the future. The forest industry prospered to establish itself on other parts of Vancouver Island and the lower mainland, where logging conditions were not as tough and waters were more sheltered.

World War II brought some attention to these coastal forests and high-grade spruce was plucked out for the manufacture of fighter planes. Then in 1943, the pioneering Gibson brothers built an export mill at Nootka sound. Few people thought ships would go so far out of their way to pick up lumber, but the mill did well almost from the beginning and was later sold to the Tahsis Company.

The town of Tahsis is one of very few communities on the northwest coast of Vancouver Island. It sits at the head of a long and scenic fjord, the recipient of more than 3750 mm of rain and snow a year. In contrast with the persistent grey overhead, the town is bright orange: battalions of orange trucks, orange boom boats and orange forklifts haul, sort and shuffle logs day after day. Tahsis is strictly a mill town, bent like a horseshoe around the sawmill that is the mainstay of its economy and the

Northwest Coast of Vancouver Island.

largest employer at its 2200 inhabitants.

The isolation that characterizes Nootka Sound is even more pronounced up the coast, creating the eerie illusion of time standing still. Most of the area must appear much as it did 100 years ago to British explorer Phillip James Hankin, who made one of the earliest recorded cross-island trips to the Nimpkish River.

The majority of the people who live in and visit the northwest of Vancouver Island today, the remaining untouched mainland islands and stands are as it is to those who earn their living from the trees, the time for development has come.

Sherry Kayra and her father Jake have lived most of their lives at Kyuquot. He was one of the first white fishermen in the area, arriving in 1929. "About three years ago we were up on the Tahsish and we saw all kinds of ribbons all over the place," says Sherry. "When we found out that the companies were planning on logging in there, we were really concerned. The lower Tahsish is the only river that hasn't been touched around here."

The Sayras' concern was echoed many times over to the B.C. government. "We received a flood of letters from one area alone," says Doug Morrison, habitat protection biologist with the Ministry of Environment's Fish and Wildlife Branch in Nanaimo.

Most people wanted either to have logging banned in the Tahsish or to find out how the area could be protected if logging occurred.

Around that time the Ministry of Forests was preparing a forest management plan for the area, but because of the public concern the planning process was expanded into a task force with representatives from both provincial and federal government resource agencies, logging companies, communities, labour groups, native peoples, associations and environmental and wildlife enthusiasts.

The goals of the task force are to identify the resource values in the lower Tahsish and in its tributary, the Kwois, and to study how logging now in progress in the upper Tahsish might affect the downstream resources. Logging plans for the lower Tahsish-Kwois are on hold while the task force wrestles with the question of whether the area should be preserved from development or if logging should be carried out within defined limits.

The task force operates under the auspices of the Ministry of Forests and is chaired by retired MP and former Campbell River mayor Tom Barnett. The group must come up with a series of land-use options by the end of 1982 for presentation to the Environment, Land Use Committee (ELUC). ELUC, which is made up of provincial cabinet ministers, will have the job of selecting the land management option it feels best suits the situation.

Throughout the west coast of the island there is an unusual preponderance of overmature timber. Virtually all of the trees are at least 140 years old; 60 percent are more than 250 years old. The northern portion is no exception. Many of its stands have a growth rate of zero and are filled with decadent cedar and mistletoe-laden hemlock, says Cory Sutherland, Ministry of Forests planning officer. "If we can clear these trees, we will replace them with healthy stands and gradually increase the productivity of the forest."

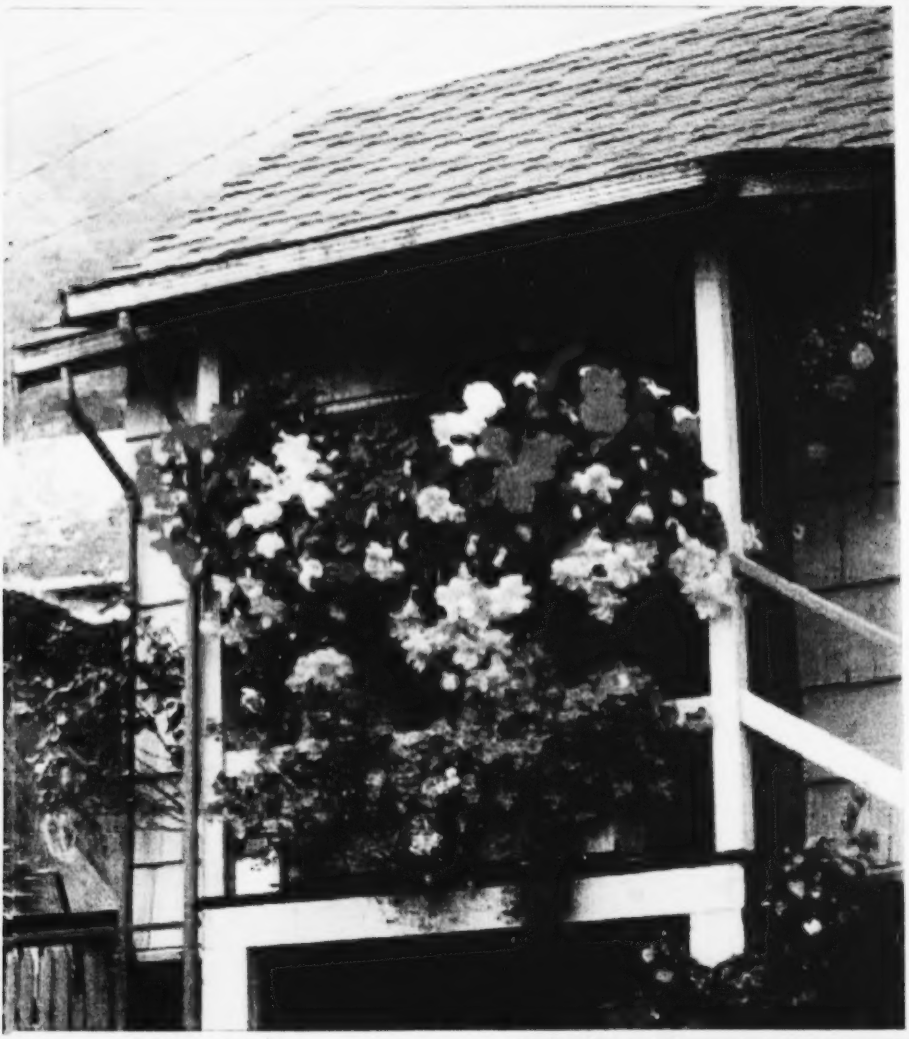
Aging trees or not, there's still a lot of valuable timber along the northwest coast of Vancouver Island. Crown Zellerbach, for example, holds 11 old timber licences in the Kyuquot area. Three are in the Tahsish watershed and contain mainly mature trees, says Crown Zellerbach chief forest engineer Don Hoffman. "The Tahsish licences would provide about 25 years of winter logging for 80 men from our camps at Nimpkish and Nanaimo Lakes. If they don't cut there, they'll be unemployed."

The people of Kyuquot have a different perspective. Seeing the timber industry has already claimed most of Vancouver Island. They want one watershed left alone.

"Most of our heritage links with these rivers," says Dick Lee of the Kyuquot Indian Band. "The land is rich with our historic sites. And our people have relied on the watershed for fishing and hunting — for their livelihood — since long before the white men came."

The band is worried that logging would wipe out elk and deer herds and jeopardize salmon spawning streams. The Tahsish has such a high flood season — one of the highest on the coast. "I haven't seen any other river rise as high as the Tahsish does," says Lee, who's convinced "it's got a lot to do with the logging at the back end." He fears logging on the lower Tahsish would cause more flooding and erosion. "And we don't want to listen to talk about reforestation. We can't wait 80 years to see the Tahsish come back."

The band's concern for salmon and steelhead is shared by the provincial Fish and Wildlife Branch, by the federal Department of Fisheries and Oceans and by the United Fishermen and Allied Workers Union. All have warned of the dangers to the fish from logging: mudslides, erosion and flooding, in this area well-known for its steep gullies and high rainfalls. An additional concern of the Fish and Wildlife Branch is the harm that logging debris left in steep gullies and flood plains



Valued as a wilderness area, much of Vancouver Island's northwest coast is marked on the map as commercial forestland. The mill town of Tahsis (left), with its 2200 inhabitants, is the area's main industrial centre.

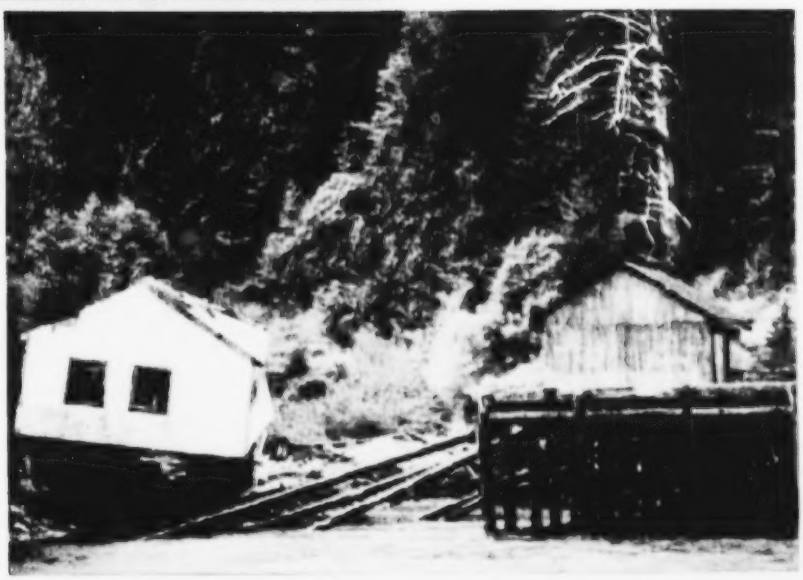
Much earlier in the century the region's commercial life revolved around the now abandoned fish cannery (right) built at Friendly Cove in 1917 by W.R. Ford.

The still unexploited regions of the lower Tahsish-Kaouts valley are under study by a special task force with representatives from both provincial and federal resource agencies, logging companies, labour groups, native peoples' associations, and caring wilderness and wildlife enthusiasts.

avoid cause fish.

Ministry of Forests planner Jim Bulten says these potential problem areas are given special consideration. "Whenever we see steep slopes, heavy rains and evidence of natural slides an alarm of sorts goes off. For example, we initiate studies of soil, bedrock and surface geology and come up with a several hazard ratings to help pinpoint what areas need special watching."

Canada's only Roosevelt elk live on Vancouver Island, and biologists think there may be more in the Tahsish than anywhere else on that side of the island. Like all elk, they depend on mature timber to cover during the harsh winters. The Fish and Wildlife Branch is hoping to learn more about their whereabouts and their movement.

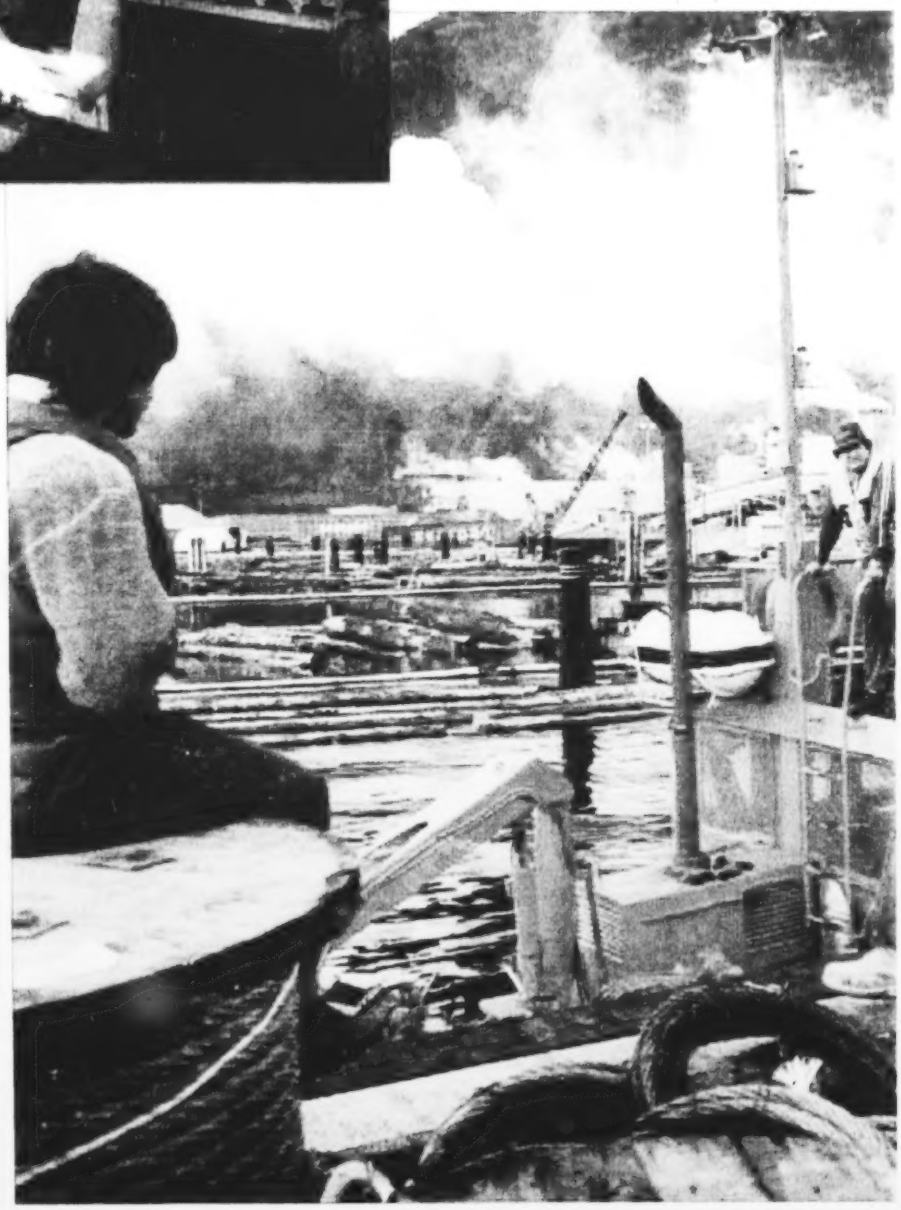


Except in a very mild winter, blacktail deer also depend on mature forests. "When a heavy snowpack occurs after logging has removed the mature timber winter ranges," says Fish and Wildlife's Doug Morrison, "there's found to be a heavy die-off of blacktail deer."

Recreation is another consideration. "There are so many boats coming up this coast and it's only natural now," says Sherry Kavia. "The attractions seem to be the fantastic beach at Rugged Point and the sea otters at Checleset Bay, but mainly the wilderness of the Tahsish." Do real-estate people come

By next spring the Tahsish task force will present a list of land-use options to a cabinet committee (LUC) which will make the final decision on whether — or how — to log the area. Logging the Tahsish would help sustain the B.C. economy and provide employment to Island mill towns such as Tahsis (right). The question is, could it also severely disrupt Roosevelt elk and deer habitat, disturb historic Indian sites, and so alter salmon and steelhead habitat that the local fishing industry is seriously affected, too?

There's no question that the final forest management decision for the Tahsish, which will fall to the forest ministry's Campbell River district manager Darcy deHart (above) to administer, will be a tough one.



up here is because the lower Tahsish has been left exactly the way it always was." Many wilderness seekers come from Vancouver and Victoria, from the U.S. — even from Germany. Most explore the waterways the more ambitious put in at Kyuquot and canoe right to Zeballos.

Dave Young, although not a member of the Tahsish task force, is in touch with a lot of the activity on the northwest coast. As co-owner and senior master of a converted minesweeper, the *Uchuck III*, he transports people, their supplies and equipment all over Nootka Sound and into many isolated camps and villages. The *Uchuck* has been the only link with the rest of the island.

Young would be very happy to see tourism grow, but unlike some others he does not think logging causes much of a conflict. There's enough space for all these things. Canoeists prefer to stay out along the coast and generally you don't see much logging along there.

But even if the canoeists aren't bothered, the caving enthusiasts apparently are. Logging and road building can damage or close off entrances and lead to heavy flooding and damage of caves. The Nootka Tahsish caves are the best caving area in the whole province, notes Dave Hutchinson, Minister of Tourism, Regional Recreation and Conservation. Both Hutchinson and Premier Vander Zalm among the most well known of those explored. The lower Tahsish River contains no caves, but the upper Tahsish is home to the kind of unusual limestone formations which speleologists find deserving of consideration.

Some local companies are trying to [illegible] without [illegible] sources. If you see [illegible] over a long period of time [illegible] can meet the needs of [illegible] claims awarded that license. [illegible] knows of future [illegible] won't change any [illegible] shed drastically [illegible] seven people.

In areas that are especially [illegible] but make no [illegible] Crown Zellerbach's Don [illegible] We are willing to trade [illegible] those licences in the Clayoquot [illegible] and we are closer to an [illegible] operation.

But land-use [illegible] problem — they only skim the [illegible] sensibility. Timber appraisal [illegible] won't disappear and the [illegible] have the best [illegible] of cutting through all the [illegible] restrictions are [illegible].

From the [illegible] the province [illegible] Island [illegible] for instance, [illegible] many [illegible] are [illegible] exactly where they [illegible] there don't know how much [illegible] else they may have, or where [illegible] them. The policy of [illegible] to know the location of the [illegible] want protected for fear of drawing too much public attention to them. Information on other resources is often received with suspicion that vested interests are shaping the data.

At the beginning there was little agreement among the committee members. Gary Dorey, defiant the forest ministry district manager for the Campbell River district which includes the Tahsish, "I could take up to two hours just to endorse the minutes of the previous meeting."

Mac Millan Bloedel and Doman Industries, the forest companies which have been logging the Tahsish for years, refused to [illegible] Dorey [illegible] progress report, nothing [illegible] Dorey [illegible] Dorey [illegible] Dorey

COLLECTIONS

Laurel Quarrel

A local earth goddess had a daughter named Daphne — so goes the ancient Greek legend — who was courted by Apollo, the sun god. Daphne resisted his advances and fled, with Apollo in hot pursuit. Her mother heard her cries and changed Daphne into a laurel tree just in time to save her from Apollo's clutches. A famous statue by 16th-century sculptor Bernini shows Daphne's hands in the process of turning into leafy branches while Apollo stares.

Apollo consoled himself for his loss, one version of the myth continues, by using the leaves of the laurel tree to crown the best poets (and later, warriors and Olympic athletes). But modern research suggests a better explanation as to why Daphne was turned into a tree.

It seems that around Delphi, where the story began, oracle priestesses were famous for uttering garbled predictions of events to come; the chewing of laurel leaves apparently helped inspire their oracular visions. Then another tribe invaded the area and established Apollo as the pre-eminent god of the land. The oracles were allowed to continue seeking inspiration from the laurel tree, however, and the newcomers adapted the laurel tradition to suit their own tastes. The image of Daphne turning into a laurel tree therefore likely represents the conquered peoples' attitude towards their conquerors.

Do you know any interesting facts about forests? Mail submissions to ForesTalk — Collections, Information Services Branch, Ministry of Forests, 1450 Government St., Victoria, B.C. V8W 3E7. Information should be brief, accurate, and sources included where possible.

Indian Houses

The Indians of the northwest coast were the only native North Americans to build houses made from massive timbers. Often 15 or 20 metres square, the houses were a winter home for extended families that might include the house chief's relatives and their children. The houses were also the site for a village's entertainment and ceremonies, which were sometimes lavish and prolonged. House-building itself was one of several reasons for holding a potlatch — a ceremony that included extensive gift-giving.

It was the custom of B.C.'s coastal Indians to situate their villages on waterfronts, ranging a dozen or more houses in a line just above the beach, with the totems facing out to sea. The styles of houses were all variations of a few basic designs. The oldest design among the Haida was the two-beam structure: heavy cedar posts sunk into the ground supporting long beams running lengthwise and clad with a shell of cedar boards light enough to be removed and transported to other temporary residences.

The Haida, Kwakiutl and several other coastal groups all placed totem poles in front of their houses, the fronts of which often were painted.

A few relics of the old Haida villages are scattered around the Queen Charlotte Islands. The most striking of these are found at Nunstints on remote Anthony Island, and at Skedans and Tanu on the east side of Moresby Island. (Visitors must apply to local band councils for permission before chartering a trip to a village on Indian land.)

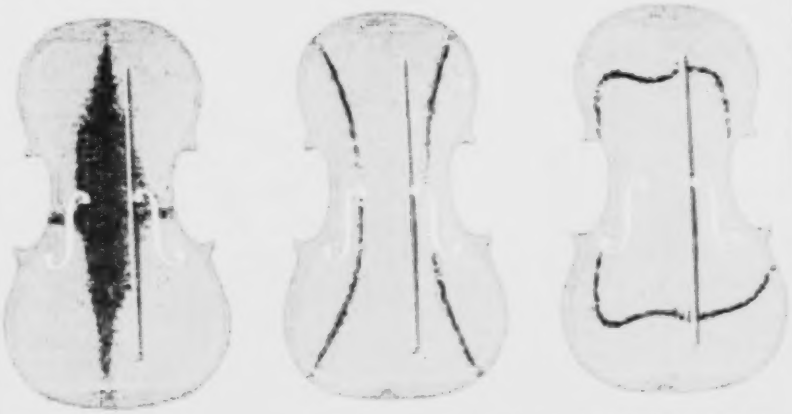
Some reconstructions of the old-style houses are more easily accessible, including the village of K'san on the Skeena River near Hazelton, a Kwakiutl longhouse at Alert Bay on northern Vancouver Island, a Haida house designed by artist Bill Reid and located at the University of British Columbia Museum of Anthropology, two houses in Victoria's Thunderbird Park, and a new longhouse at Skidegate on the Queen Charlotte Islands which is especially notable for its towering Bill Reid totem pole.

Kwakiutl village, 1880

THE GREAT VIOLIN MYSTERY

The sound of a really fine violin is unforgettable: even when soft and mournful, it reaches across a large concert hall; in the hands of a Paganini a violin can bewitch the listener. The best violins are two to three hundred years old. The richness of tone of a Stradivarius or a Guarnerius violin made in the 17th or 18th centuries simply can't be equalled by violins built in this century. But what secrets of the art did the old violin makers take with them to their graves?

Part of the answer lies in the quality and species of wood the craftsman selected (spruce for the violin's top plate, maple for the bottom), but more especially in the way he shaped the wood. Before assembling the violin the craftsman chiselled off the insides of the top and bottom plates until the wood produced certain desired tones when tapped. Then he assembled the violin; if he didn't like the sound of the finished product he took it apart and shaved and bent the plates again until he found just the tone he was looking for.



Fine powder sprinkled on a vibrating plate reveals a violin's acoustic patterns. SCIENTIFIC AMERICAN *October 1981*

It wasn't until the early 19th century, however, that a man named Chadni discovered that the top and bottom plates of the world's best violins had specific and identifiable vibrational patterns: the top plates were pitched to C-sharp or D, the bottom to D or D-sharp. In more recent follow-up studies, an American violin maker and a Harvard physicist together spent thirty years measuring the acoustic properties of violin plates, taking apart a number of old violins and using the latest in laser technology to study the complex vibrational patterns of the wood. They confirmed and expanded upon Chadni's earlier work, isolating some of the vibrational patterns in violin plates that ultimately produce the most beautiful music.

Still, much of the mystery remains as to how the old craftsmen could predict the tone of the finished violin simply by tapping the unassembled plates. After studying a few of the dozens of sound qualities that have to be controlled in making a concert violin, researcher Carleen Maley Hutchins reports in the October 1981 Scientific American, **"It is even harder than before to comprehend how the early luthiers managed to build instruments that were sophisticated and beautiful in both tone and appearance."**

BULL OF THE WOODS

Gordon Gibson quit school at age 12 to join his father's logging operation on the west coast of Vancouver Island. He went on to become a pioneer lumberman in the rugged Lahsis Zeballos area and an important spokesman for the independent logger. His autobiography, *Bull of the Woods* (Douglas and MacIntyre, 1980), captures the flavour of those not-so-distant days when ingenuity and guts were the prime ingredients of success in the business. And Gibson doesn't omit much of his colourful, raucous life. When his father imported a pair of oxen to haul spruce logs for making airplane carts and one of the beasts gored the other, Gibson relates, "We salted the old bull down and later ate the son of a bitch."

Gibson's fortune was made in a deal with the Danish East Asiatic Company to ship lumber from his mill at Lahsis. Of the frantic months leading up to the first shipment in 1945 — the first of its kind on the remote outer coast — Gibson says, "Had any of us faltered during the six months prior to loading, we would have been like the other mills built in the area that had broken both men and dreams." Gibson's business ventures included every kind of lumbering, from handlogging to shipping wood in a luxury cruiser turned rum runner; he was also a trapper, a fisherman, a whaler (briefly), a mining prospector, a construction contractor, a provincial MLA and a hotelier. Not bad for a man whose teacher told him he had a dog at home that was brighter than Gibson. "It's a do-it-yourself world," Gibson says.

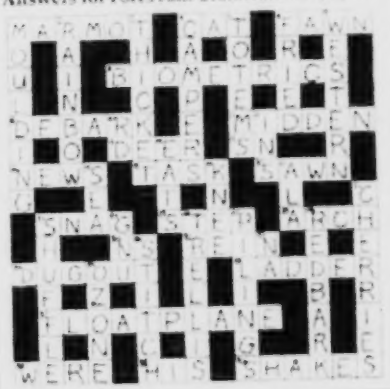
The Log Cabin Myth

Americans have long treasured a belief that the log house originated with the early settlers of the forests of New England. But recent studies of early European houses give a truer picture of the history of log houses.

The typical log house design — notched logs stacked on top of each other with openings cut for the doors and windows — dates back to an earlier pioneering era, the time when northern Europe was first settled. Today, the remains of log houses dating from 700 B.C. can still be found in Poland.

As European civilization developed, log-house architecture virtually disappeared, only to resurface in America, first in the Swedish settlements in Delaware dating from 1638, and soon after in the German villages of Pennsylvania. There, as in Europe, log cabins were discarded in favour of more refined house styles. In the 1960s a wave of nostalgia for the vanished pioneer era reversed interest in log house building, where the setting is likely as not to be a city suburb.

Answers for ForesTalk Crossword (see page 4)



The Silent Power of the Trunk

by Tim Fitzharris

A raindrop falls to the forest floor, trickles through the debris, and soon is absorbed by the fir tree's root system. Two hours later a particle from that droplet has worked its way through the tree trunk to a needle at the end of a branch nearly 20 storeys above the ground.

The trunk of a tree channels water and nutrients to the tree's needles (or leaves) where photosynthesis produces the tree's life-sustaining sugars. To do this, it must support and position the leaves to gain maximum benefit from available light; it must transport water and minerals from the roots upward to the leaves, and it must carry the manufactured sugar and proteins back to areas of growth and repair.

A complete explanation for the upward movement of water through the trunk has eluded scientists for years. The most commonly accepted theory is based on the tendency of water molecules to stick together, a phenomenon readily apparent to anyone watching water bead up on a freshly waxed car. As a leaf loses water to the air through evaporation (transpiration), other water molecules within the leaf shift to fill the vacated spaces. In so doing they drag along more water molecules behind them, creating an unbroken string of water molecules extending all the way up from the roots.

Botanists estimate that a pressure of 20 to 25 atmospheres is required to pull sap to the top of British Columbia's tallest trees. This is about the pressure you would need to drink rootbeer through a straw almost three football fields long.

The lifting power of the tree is even more impressive when you consider that 1000 kg of water is required to produce one kg of tree. For a Douglas fir to grow to be two metres in diameter and 65 metres tall, its vascular system must effect a transportation of water roughly equivalent to raising a B.C. ferry to the top of the Empire State Building.

Tree trunks are the superstructure of the forest; sculptured pillars, rough, solid and graceful. Their silent beauty gives little hint of the dynamic forces at work within.

People

PHOTO: PAUL BAILEY

Leo and Bertha Curé

by **Des Kennedy**

"It's impossible for a bushman to retire," Leo Curé says. "Maybe it's possible for a banker or doctor, but not a bushman." Now a robust 74, Leo is still going strong after more than half a century working outdoors as a cowboy, horselogger, powder monkey, bush engineer, gold miner and trapper.

For the past eight years Leo and his wife Bertha Curé, who's a sprightly 66, have been idling away their so-called retirement years sawing several thousand squares of cedar shingles on homemade portable shingle mills. From their home at Royston on Vancouver Island, the Curés travel throughout the Comox Valley with their trailer-mounted saw. With Leo 'weaving' (forcing the quarter-round blocks through the whirling circular blade) and Bertha 'bundling,' they produce about a square of taper-sawed shingles in an hour. That costs the customer, who supplies the blocks, twenty dollars. "We could charge more," Leo says, "But we're satisfied. We're not doing it to make a lot of money. So long as it pays expenses."

The shingle-cutting business started "more or less as a joke," says Leo. "We bought this house in '72. It needed some fixin' up and we wanted some shingles for the roof. Well, no use in buying them. There was lots of yellow cedar on the beach. I built that first little mill out of two-by-fours and nails. It took two months to put it together and cost six hundred bucks." After they'd sawn enough shingles for the roof, a neighbour bought the mill for the cost of materials.

Within weeks Leo was working on a second mill to accommodate friends' requests for shingles. Fifteen hundred squares later that mill was sold to a persistent buyer and Leo "got busy building another one." The present rig — the fifth in eight years — "is the best one of all. It's got fingertip control."

Despite their twelve grandchildren, 'old' is not an adjective you'd apply to Leo and Bertha. Born in 1908 in Quebec, Leo grew up in the French-speaking communities of Manitoba. When he was seven, the family began homesteading in the Beaver Dam district. Boyhood summers were spent "sawing wood all day by hand," getting the hay in, and learning to break and train horses. "It was all horse and buggy in those days." His worst memories are of the great influenza epidemic, "right after the first war. There were bodies stacked up like cordwood; you couldn't even bury them. Nobody went anywhere then."

When the long, bleak Manitoba winter began descending on the homestead, Leo's father, steam engineer by trade, would head for the bush to work at a small mill.

At age eleven Leo began spending summer holidays as a steam boiler fireman for fifty cents a day plus board. No classroom student, he quit school at age fourteen. "I could speak English by then, and that's all I wanted. Growing up in a place like that, you learn all kinds of things you'd never learn in school."

He started work at a logging camp north of Lake Winnipeg. "We walked sixty miles on ice into that camp," he recalls. They slept on spruce pole beds and spruce bough mattresses. "A good forty men in one bunkhouse; and we were so lousy we could hardly sleep at night. We'd have two sets of long underwear, Stanfields. We'd soak one pair in water and hang 'em out to kill the nits and lice. You'd bring 'em in and thaw 'em out for a couple of days, and by then you were good and ready for a change.

"I was a handyman in camp. I could do anything that was required — except cook! I did some falling, and driving horses — four horses hauling logs to an ice dump. Sometimes there'd be a huge pile right on the

Seven-year-old Leo Curé helping to skid silver spruce in northern Manitoba, 1915.

riverbank. At breakup they'd be river-driven to the mill." In the spring he came out with $70 in his pocket, "when a dollar was worth a dollar. I got a room in a good hotel for fifty cents a night; dinner was twenty-five cents, including all the bread and butter you could eat. I bought myself a brand new blue serge suit for sixteen dollars at Eaton's."

At age sixteen he struck out for B.C. "I always wanted to be a cowboy." He got a job working for the huge Douglas Lake Cattle Co. ranch near Kamloops. Of the three years spent riding range, often sleeping under the open sky with a saddle and blanket for cover, he says: "I loved that work."

In '27 he returned to Manitoba. When the Great Crash came, Leo "headed for the bush. Depression? People were jumping out of windows. It was pretty damn tough to make money, but you can't starve bush people — impossible!" He took to trapping beaver, muskrat and weasel in the Flin Flon area. "I'd trap sixty to seventy miles from town, on snowshoes with a backpack and sleeping roll, a little axe and a gun. Nowadays people don't believe you can live like that. But I remember lots of times sitting at a fire, thirty below zero, the northern lights twinkling, when all you had to sleep in was your feather roll."

Bertha, meanwhile, had been growing up quietly in the farming country around Flin Flon. They met and married in 1931. With fifteen dollars to his name, Leo hopped one of the Great Depression freights heading west. He tracked his uncle, a steam mechanic, to a logging camp up the coast, and got a job alongside him firing the donkey. By '36 he'd got his papers as a logging donkey engineer. "I ran donkeys for fifteen years all over the coast. I repaired all the steam machinery in camp. They'd lend me to other camps — they had boiler makers from town who were used to repairing machines in a shop, with hoists and no rain. To us bush engineers it didn't matter if the donkey was upside down!"

With considerable understatement Bertha says she had her hands full raising two sons and a daughter on their float house — and keeping the toddlers from going overboard. Altogether the Curés spent twenty-two busy years living in remote float camps.

During the fifties Leo ran his own logging camp around Malcolm Island and northern Vancouver Island. The nine-man crew included, at times, his own two sons. "We were a small outfit, and very versatile. We worked nine-hour days, seven days a week," putting about a section of big cedar and spruce into the water each day.

But it wasn't all work. "We used to have lots of parties. On weekends there'd be a party in the cookhouse — a dance. The guys on the tugs would hear about it on the radio. There'd be tugs full of people going around from camp to camp. My uncle and his two daughters and I had a band — I'm a fiddler — and you couldn't beat that music for dancing.

"One time the Union Steamship pulls in, the *Adventure*. People hear the music. An hour later the boat is ready to go. The whistle blows. But the chief engineer is inside dancing and so is the whole crew. The captain comes in to see what the hell is going on. The woman and kids all know him — Captain Wilson. They grab him and won't let him go with dancing. Finally, at three in the morning, the captain goes up to the stage and says: 'Here's ten dollars if you'll stop the music long enough so we can get the hell out of here!'

"There was nowhere in the world a finer place to live than the coast back in those days. I would have stayed logging if I hadn't seen the trouble coming," he says, referring to the timber licences introduced in the early 1950s that were intended to keep tighter controls on province's annual timber harvest. "The government squeezed out the little outfits. Eventually they couldn't get any more timber. Lots of little outfits went flat broke. They squeezed us out and gave it all to the big guys. I heard about it coming. I said to my broker: 'That don't smell so good.' We sold out before the quotas came in."

With cash in hand the Curés set off on another adventure — this time gold mining in the Cariboo. "I had a feeling," says Leo, "there'd be good money in gold. I knew the oldtimers only had a shovel and sluicebox, and I had cash, so I bought a twelve-ton suction dredge.

"Working eight hours by myself with that machine I could pick up an ounce of gold. An ounce was worth twenty-eight dollars. We were waiting for the price to go up." But, two years before the price of gold began to rise, Leo says they closed all the creeks and rivers to dredging. "My machine did seven yards an hour. There was no pollution whatsoever. I had arguments with the environment guys and the fisheries. They could have put a ten-yard limit on dredges. But they never could make a law to help the little guy. My dredge was obsolete, so I sold a $30,000 machine for $250 — scrap!"

So it was back to the coast, to the comfortable home in Royston which needed a new roof. On days they're not cutting shingles, Leo and Bertha walk eight or nine miles just for the exercise. "We're healthy people," says Leo. Bertha, sitting quietly at his side, musing about maybe not working much longer, says with a grin: "Well, enough is enough."

Forest unions striking for seedlings? Or picketing for pensions? Maybe not, but today unions are fielding experts on pensions, legislation, reforestation, and a half dozen other subjects old-time unionists never dreamed of. And changes also bring new problems.

HOW WOBBLY ARE B.C.'s FOREST UNIONS?

by **Ken Bernsohn**

I dreamed I saw Joe Hill last night,
*alive as you and me.**

He was shocked. Joe's ghost had gone down to a union office in Vancouver that was as fancy as the big forest company offices a few blocks away. The union offices were filled with economists and public relations men, with people working on pension plans and people talking about the need to plant more trees.

"I almost died" said he.

Things were different back when Joe Hill was an organizer for the International Workers of the World (IWW), the first union to have an impact on the woods in B.C. In those days at union meetings members used to yell out:

Eight hours of work
eight hours of play
eight hours of sleep
and
EIGHT DOLLARS A DAY!

The IWW — or "Wobblies" as they were called — fought here in B.C. and won. Joe Hill even wrote a song about it. The chorus goes:

Where the Fraser River flows,
Each fellow worker knows
They have bullied and oppressed us
But our Union still grows.
And we're going to find a way, boys,
For shorter hours and better pay, boys,
And we're going to win the day, boys,
Where the Fraser River flows.

Before World War I the concept of unions, although no longer a new idea, was not yet accepted. The International Brotherhood of Papermakers had started in 1885. In 1900 a short-lived Woodworkers' Union had been tried in Vancouver. But the IWW was the first union that organized entire B.C. industries instead of concentrating on individual crafts, like carpenters, plumbers or electricians.

The Wobblies fought for free speech, for shorter working hours, for better working conditions, and for higher pay. Wobblies in B.C. were "blackballed" from getting jobs; some were tossed in jail. Elsewhere Wobblies were beaten up and even killed. It was an ugly fight on both sides of the management-labour struggle, with the IWW inventing work-to-rule, popularizing "sabotage" as a word, and, according to logging historian Stewart Holbrook, raising "more hell in the timber than booze, hurricanes, forest fires and Acts of Congress." Here in B.C. the Wobblies are credited with generally improving logging camp conditions by, for instance, getting rid of "muzzle loaders" — the tall stacks of bunks that had to be climbed into at one end. They also got better pay for the men on the Northern Canadian Railroad, now part of the CNR.

In 1915 in Utah, Joe Hill was executed for murder in a case that's still argued about. He died just after the Wobblies had reached their peak of success, with about 10,000 members in B.C. alone. During World War I the members declared themselves conscientious objectors and the

*Joe Hill by Early Robinson & Alfred Hayes

IWW was declared an illegal organization. Given the union's loose administrative structure, it soon died out.

"Takes more than guns to kill a man,"
Says Joe, "I didn't die" . . .
Says Joe, "what they can never kill
*Went on to organize."**

In Vancouver in the 1920s any loggers wandering past the stores selling axes, boots, and rough clothing toward one of the loggers' saloons had to pass Sam Scarlett on the corner of Carroll and Cordova. Sam, a Wobbly who had spent five years in jail for union activity, kept talking up a single forest industry union. Finally, just before the stock market crashed, he and some friends organized a new union.

At a time when wages were being cut back from 40 cents an hour, the idea of the Lumber Workers Industrial Union (LWIU) slowly caught on. Some places were paying Chinese and Japanese workers a dime an hour, adding two cents for East Indians. Single whites were getting 22 cents and married whites a quarter.

The new union struck at Fraser Mills, at Timberlands, at Elk Falls. Finally, in 1934, the LWIU had a big win. At Bloedel's Upper Camp on Vancouver Island 62 loggers were fired. Five hundred men marched off the job in their support. The strike spread to other camps, until thousands were on strike demanding a 15 percent increase in pay with $3.20 a day minimum, an end to working on Sundays, and recognition of the union. The companies ran newspaper ads saying how terrible the union was; the mayor of Vancouver approved a tag day to raise money for the strikers. On April 26th the provincial government stepped in, setting a minimum wage of 40 cents an hour.

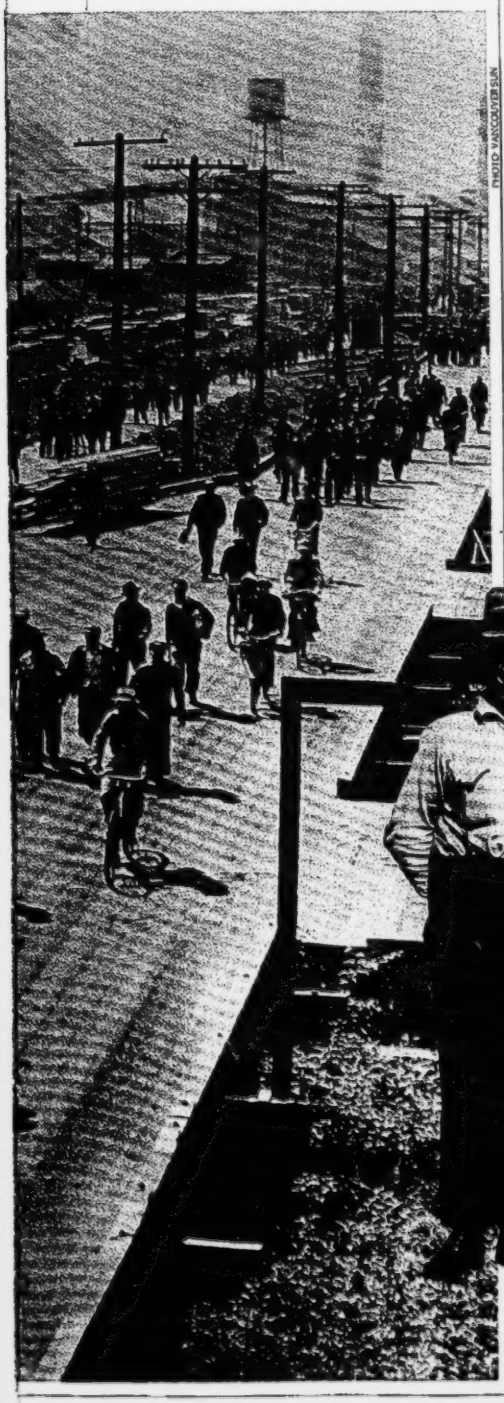
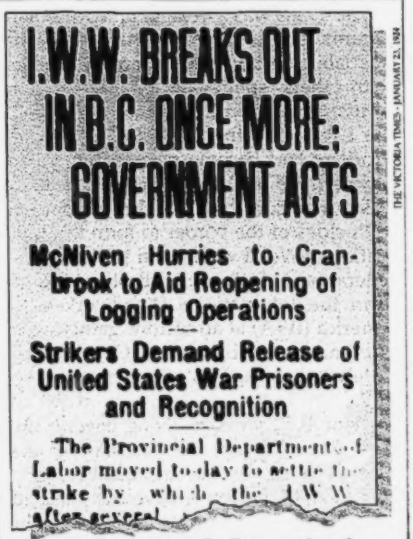


PHOTO VANCOUVER SUN



I.W.W. BREAKS OUT IN B.C. ONCE MORE; GOVERNMENT ACTS

McNiven Hurries to Cranbrook to Aid Reopening of Logging Operations

Strikers Demand Release of United States War Prisoners and Recognition

The Provincial Department of Labor moved today to settle the strike by which the I.W.W. after several

THE VICTORIA TIMES - JANUARY 21, 1934

Early in the century the International Workers of the World (IWW) ruffled a lot of feathers as it fought for free speech, better working conditions and higher pay. A direct IWW descendent, the Lumber Workers Industrial Union (LWIU) created B.C. labour history with its 1934 strike of Vancouver Island logging camps, including Bloedel's Great Central Lake camp where the RCMP was very much in evidence (below). The LWIU evolved into the IWA by 1937, and one of its earlier strike actions took place at Fraser Mills in 1946 (left).

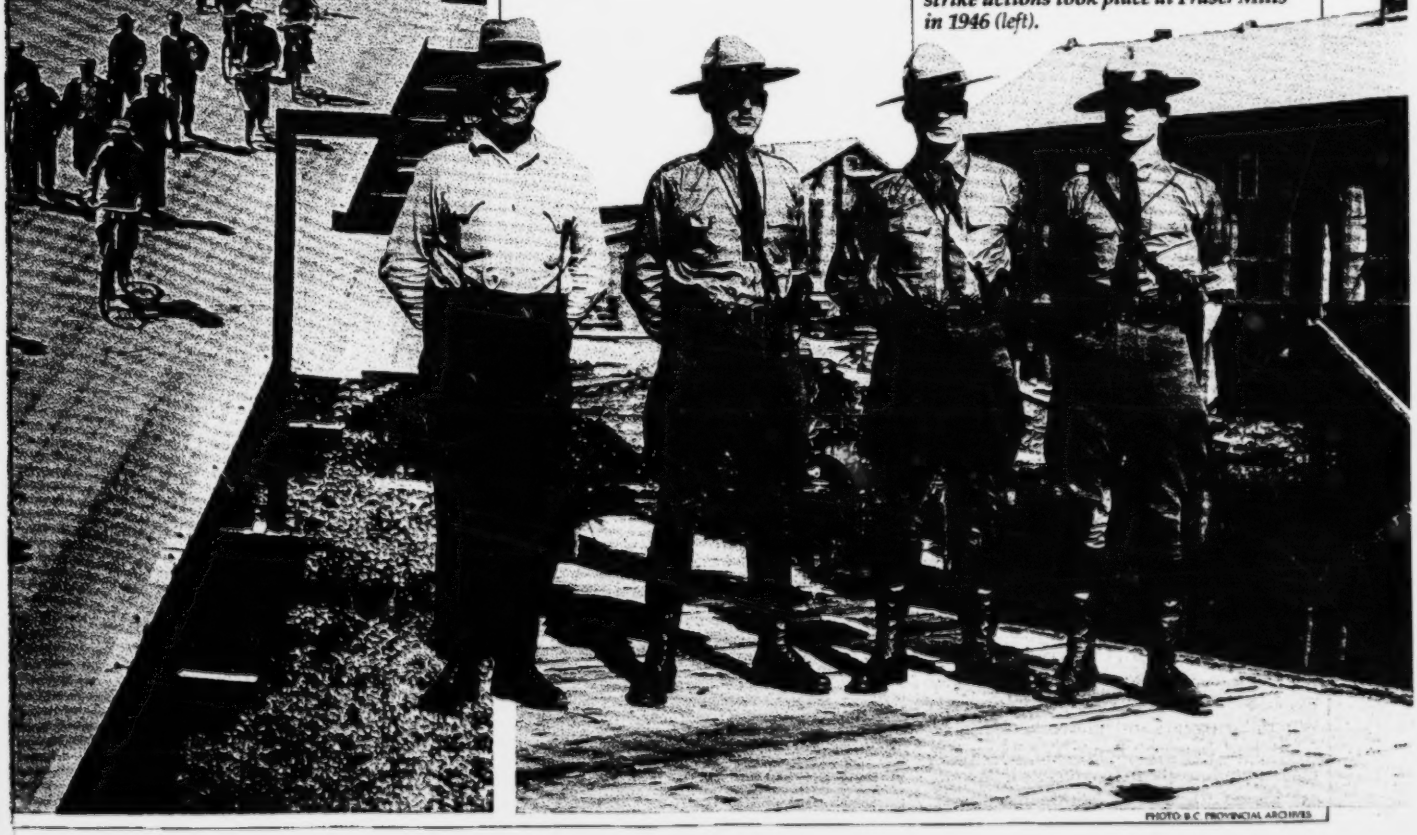


PHOTO B.C. PROVINCIAL ARCHIVES

The 1930s was a volatile time for union organization across North America. Various labour groups would appear, merge with others, split again, mount common fronts, then boycott one another. In B.C. the LWIU and the Lumber and Sawmill Workers had become part of the United Brotherhood of Carpenters and Joiners by 1936, then joined with other unions on both sides of the border to form the Federation of Woodworkers. In 1937, the new federation split from the Brotherhood to form the International Woodworkers of America (IWA) at an historic gathering at Tacoma, Washington. B.C.'s Harold Pritchett was the IWA's first president.

For B.C. workers living beyond the Fraser Valley, the formation of the IWA was of little importance. Many of them were happy to have any job at all during the Depression; others didn't want any part of a union. Although there were some IWA members in the B.C. interior, there was little actual union activity. Even on the coast the IWA represented only some of the sawmill workers and loggers.

Right up to today a lot of workers in B.C.'s forest industry have repeatedly rejected unions. In Quesnel, Prince George, and other interior towns there are dozens of mills where the workers are quite content without a union.

During World War II, however, the National War Labour Board helped the union cause by virtually ignoring the demands of any workers who weren't unionized. Toward the end of the war, mill managers Roy Spurr and Don McFee tried to get a raise for their men at Sinclair Mills and Eaglet Lake. The Board turned them down because the men weren't unionized. When the loggers and millworkers learned what had happened, an IWA organizer was invited north. In two weeks 150 workers joined the union. Within months 75 mills were unionized. By 1953, the IWA was big enough to shut down the north, where it now counted nearly 5,000 members.

The most dramatic event in the history of the IWA in B.C. occurred in 1948. At issue was the fact that the leadership of the IWA, like the leadership of B.C.'s other powerful trade unions of the day, was communist. That hadn't been a major problem in the 1930s when workers were attracted to communism as an alternative to starving; nor had it been as much of a problem in the early 1940s when the USSR was an ally against the Nazis. But by 1947, the Iron Curtain had rung down on the IWA and the union split into "white" and "red" blocs. The in-fighting was fierce, and the struggle was finally settled when union locals voted to remain within the IWA under "white bloc" leadership, rather than form a separate Canadian communist union. Although the battle has been over for 35 years, the scars still remain, as IWA's Clay Perry notes: "To say anything at all about IWA history without mentioning the 1948 struggle is like publishing a history of the U.S. without mentioning the Civil War."

In the 1950s, B.C.'s forest unions were busily taking advantage of B.C.'s growing lumber industry. Every time a new pulp mill was built, each union became larger and more effective. Pay, benefits and working conditions improved. But by the 1960s some members felt their unions were just something you had to join to get a job at most mills. Others felt their unions were too big.

In 1962 the pulp mill at Castlegar broke away from the United Papermakers and Paperworkers. They were joined by other pulp mill workers in a new union early in 1963. This new union, the Pulp, Paper and Woodworkers of Canada (PPWC), is organized differently from any other of the

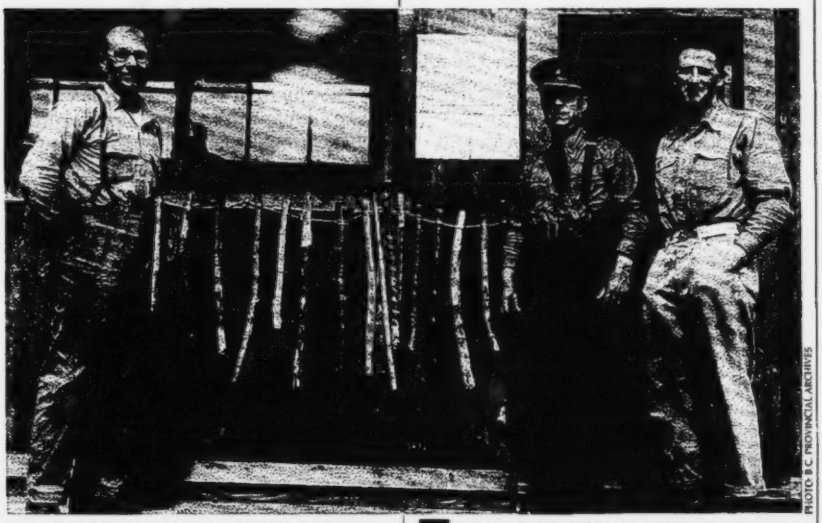


PHOTO: B.C. PROVINCIAL ARCHIVES

700 MILL WORKERS STRIKE

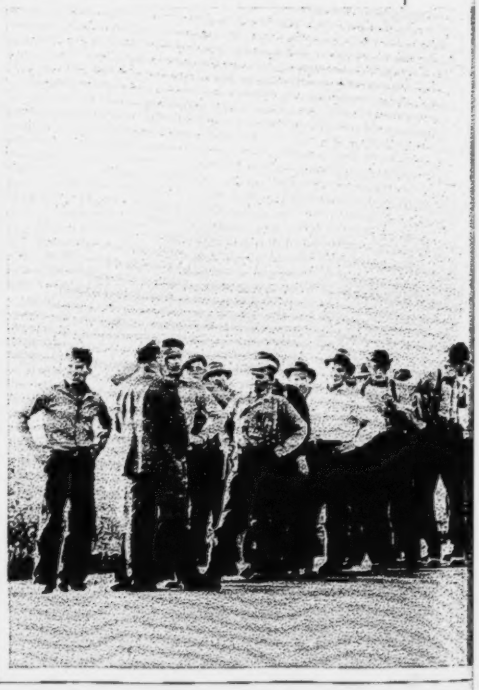
30 Police at Plant; Red Badged Pickets on Scene

Special to The Vancouver Sun

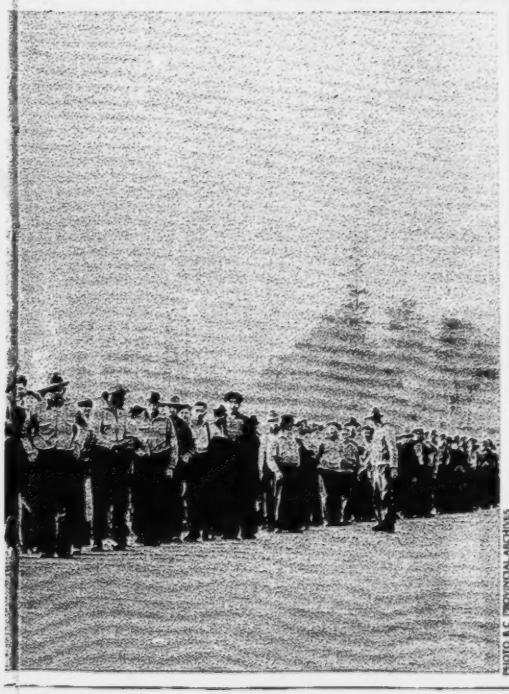
FRASER MILLS, Sept 17. Seven hundred employees of the Canadian Western Lumber Co. Ltd. went on strike this morning following refusal of the firm to gr[illegible] per cent wage

THE VANCOUVER SUN - SEPTEMBER 17 1931

Port Alberni mayor D.W. Warnock addresses striking loggers on Third Avenue during the 1934 LWIU Vancouver Island strike (below), while police in the Great Central Lake camp pose beside an odd assortment of clubs (left).



1926 Vancouver Island rigging crew.



PHOTO, B.C. PROVINCIAL ARCHIVES

LOGGERS' TAG DAY

CITY AGREES THAT STRIKING MEN IN THE RIGHT

The Vancouver City Council sitting in finance committee Wednesday afternoon was unanimous in approving a tag day for the Lumber Workers' Industrial Union to raise funds for the support of between 800 and 1000 loggers now on strike for higher wages and better working and camp conditions in logging camps on Vancouver Island.

A letter to the Council resolution provided that Mayor L. D. Taylor should get into communication by telephone with Hon. G. S. Pearson Minister of Labor before the tag day is held.

FINAL WORD DEFERRED

Final authority to hold the tag day which really ... Mayor was held

THE VANCOUVER SUN - FEBRUARY 21, 1936

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major and more centralized B.C. unions. Each mill is virtually a self-contained union local with its own officers who work in the mill and who do a lot of their own negotiating.

The PPWC has the smallest headquarters staff; when you try to talk with president Angus McPhee, the phone keeps ringing as locals call to talk things over. "You can't shelve things between negotiations," says McPhee. "You've got to keep on them to make sure companies keep their commitments, and you get improvements in working conditions."

The phone ringing in Angus's office is a reminder of the importance all unions place on keeping in touch with the workers at every camp, mill and plant. They have to. During the 1960s several mills switched unions, forcing the unions to learn that there were other issues on the workers' minds besides wages and hours of work. Canadian nationalism is one such issue, and it's a very sensitive one. By 1968 the Canadian arm of the United Papermakers and Paperworkers had a bilingual Canadian newspaper, a Canadian director with wide powers, and Canadians had the

right to start and run their own legislative programs. In 1972 the Pulp, Sulphite, and Paper Mill Workers union merged with the Paperworkers. Although the membership had a lot of Canadian-based autonomy, it wasn't enough, and in 1974 the 52,000 Canadian members split from the American union to form the Canadian Paperworkers Union (CPU).

Comments Art Gruntman, vice-president of the CPU: "We're not sure we really were worse off before. Perhaps we're less business-oriented and have more of a social conscience. But what it really boils down to is what one guy said when we split off. 'It always was a funny feeling sending union mail south of the border.' Now we have over 60,000 members, in a *Canadian* union."

IWA Men On Strike In North

More than 2000 woodworkers in the Prince George area went on strike today at 7 a.m.

Members of International Woodworkers of America (CIO), they walked out after voting overwhelmingly in favor of strike action in a government supervised ballot last week.

This latest dispute in B.C.'s multi-million-dollar lumber industry followed rejection of Interior Lumber [illegible] Association

THE VANCOUVER SUN - SEPTEMBER 28, 1963

Statements like that rankle IWA members, who make the case for an international union. They note that most forest companies operate on both sides of the border. "That's one advantage we have," says one IWA worker. "We can find out what they're doing in the U.S. and coordinate our efforts. We can draw on the economists, tax people, and foresters on staff. Whenever U.S. mills try to cut back on B.C. exports to the United States, the IWA down there goes to bat for us."

In reality, which union is the best for a worker depends on what he's looking for, and what he's looking for is continuing to change. The traditional attitude used to be that workers under 35 wanted more pay, workers over 45 wanted a better pension, and those in between wanted both. When the lumber market dropped at the end of 1979, job security became a lot more important than a pay raise.

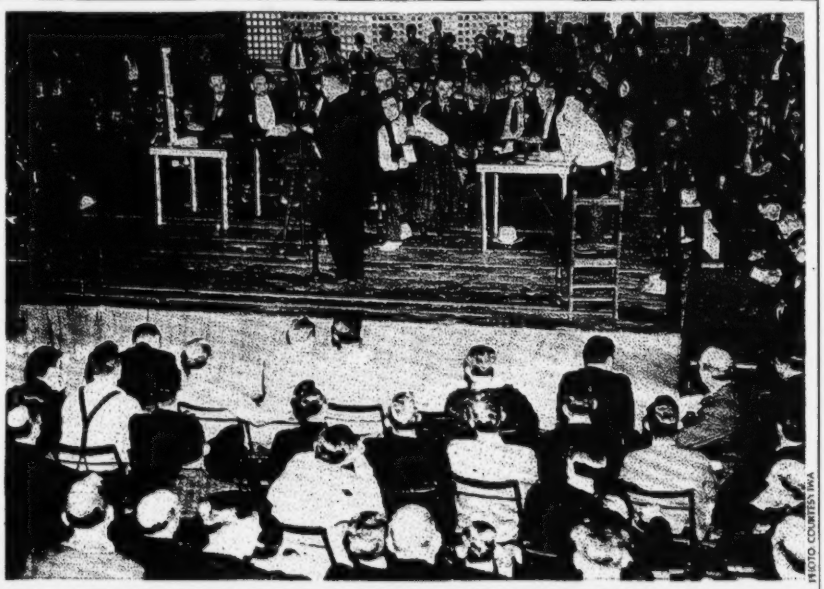


PHOTO COURTESY IWA

PHOTO BJ CHALLENGER

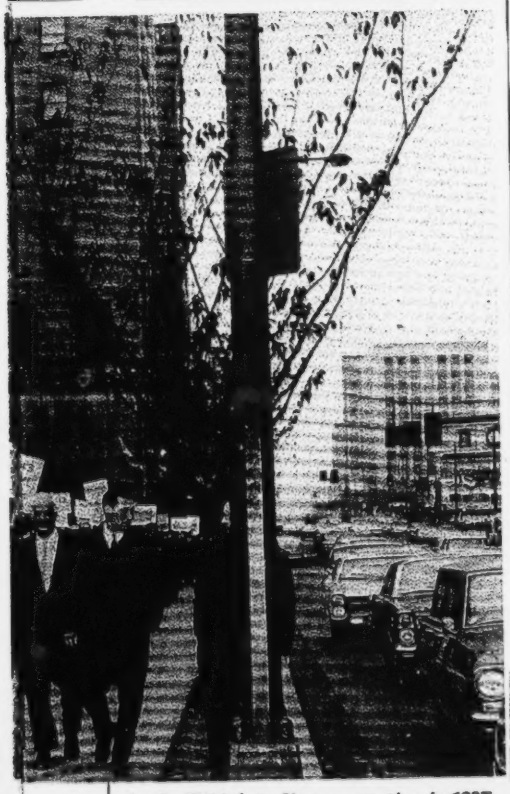


PHOTO COURTESY IWA

At the IWA founding convention in 1937 in a Tacoma, Washington, boxing gym, British Columbia's Harold Pritchett** (top left, white shoes) **was elected as the international union's first president.

***In 1966, Vancouver IWA members joined other B.C. Federation of Labour marchers** (left) **to protest the jailing of trade unionists. Perhaps B.C.'s best-known labour leader is IWA's Regional Council No. 1 President Jack Munro** (top right).

Five years ago it was relatively easy to drop out of school, get a job on the green chain sorting lumber at a mill, buy a four-wheel drive, and get married. Today computerized lumber sorters are getting rid of the green chain — the traditional entry level job at most mills.

But the impact of modern technology is just part of the employment problem facing unions. Suddenly union leaders including Jack Munro, Art Gruntman and Angus McPhee have been joined by government officials, university professors and almost everyone else concerned with Canada's timber supply in saying that most of the forests worth logging, and the jobs that go with them, are severely threatened unless an active reforestation program gets going in every province.

Jack Munro told a meeting of high-level government officials and company executives: "Failure to properly manage Canada's timberlands will mean disaster in scores of communities. Thousands of loggers and mill workers who are under 40 will be uprooted and forced to relocate in other occupations. We estimate that without proper forest management starting immediately, we will lose 100,000 jobs in Canada within the next 20 years."

Ministry of Forests Chief Forester Bill Young agrees: "Jack's right. That's why we have been increasing our replanting of forests from three million seedlings in 1956 to 78 million in 1980 to 90 million in 1981, with more planned for the future. It isn't as bad as it easily could have been, but unless we keep this progress going, we will indeed be in trouble."

British Columbia and New Brunswick were two of the first provinces to try to change their timber supply situations. Private companies in B.C. are being encouraged through government funding to become more active in the province's reforestation objectives. More trees are already being planted, with more due for each of the next several years. But there are no instant just-add-water-and-stir trees. Even with 38 new greenhouses raising several million seedlings each, it's going to take time to solve the problem. And that worries unions, as if they didn't have plenty of other issues to be concerned with.

"Today the job of the union is changing," says CPU's Art Gruntman. "We have to deal with occupational health and safety, and be concerned with the political scene. It seems strange for a union to be concerned with the federal budget, but they can legislate things away from us. Last November's budget announced they were going to tax dental plans; that changes the real wages the workers went on strike for."

Union leaders now realize that government policy in Sweden can directly affect B.C. pulp mill workers, that the economy in Japan, Germany and the United Kingdom affects lumber markets for B.C. mills — and job prospects for workers — almost as much as housing starts in the U.S. do. But while union leaders are well aware of contemporary pressures on job stability, a lot of union members aren't.

The tactics used to handle grievances in a mill won't get more trees planted; skills learned on the picket line aren't a big help when arguing about the federal budget. Educating the members on these issues is much like trying to teach new tricks to old dogs. "The only way we can get a big turnout at a union meeting," one head of a local laments, "is to put on the agenda raising the officers' salaries."

Does that mean the days of the Wobblies are as dead as Joe Hill? At first glance, maybe. But if you talk to IWA's Jack Munro, CPU's Art Gruntman, and PPWC's Angus McPhee, they'll tell you nothing has really changed. It's just that the fight for better wages, working conditions, and safety continues on a different battlefield, one that requires economists, doctors, and pollution researchers as much as shop stewards and picket line

24 province **** Tuesday, September 3, 1974

55,000 UPIU members form Canadian union

The United Paperworkers International Union (UPIU) no longer is an international union.

Sunday the 55,000-member Canadian section became an independent Canadian union, known as the Canadian Paperworkers Union [illegible] and the won't be an international union anymore," said CPU regional vice-president E. P. O'Neal.

O'Neal and fellow executive members were sworn in last week in Mont[illegible] utive of th[illegible] ngress

The Canadian union has four regions. O'Neal will be responsible for B.C., Alberta and Saskatchewan.

The changeover also [illegible] Canadi[illegible]

THE VANCOUVER PROVINCE, SEPTEMBER 3, 1974

bald eagle

PHOTO TIM FITZHARRIS

FOREST HABITAT

by Enid K. Lemon

HIGH TREE NESTERS

In the tops of the tallest trees where the view of nervous prey below is both clear and wide, a number of B.C.'s magnificent raptors establish their nests, nurturing to maturity another generation of high-tree nesters.

bald eagle

H

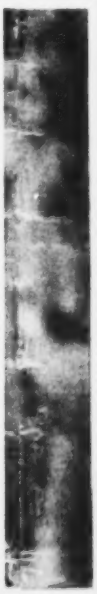
bald eagle's nest

▼ *osprey*

▲ *a Cooper's hawk and her young*

red-tailed hawk

▼ *sharp-shinned hawk*



Province of British Columbia
Ministry of Forests

LODGEPOLE PINE